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Royal School of Mines.

PROF. SMYTH'S LECTURES ON MINING—No. XXXI.

[BY OUR SPECIAL REPORTER.]

In the case of shafts sunk through stratified deposits mechanical arrangements are made for bringing the mineral to the bottom of the shaft, and getting it raised or hoisted as soon as possible, though there may be a small accumulation of cars or mineral at the bottom. Such accumulation as there is will probably be accommodated by having a double line of rails, a sort of siding, in fact, where one set of trams can be replaced by another. But the case is very different in mines working on anything like lodes. There you have down the shaft levels going off at intervals, in our own country 10 or 12 fms. apart, in Saxony 20 fms., and in Bohemia as much as 30 fms., and in a great number of these levels there may be places working vigorously. The machinery at the surface must constantly be varying its objects, drawing sometimes from deep sometimes from shallow levels. At galena and silver works, where there are no great amounts of mineral, the accumulations will only amount to a few tons, but with tin, gold, &c., where the mineral is dissiminated, there will be an accumulation sometimes of hundreds of tons. Sometimes the material is allowed to accumulate in the levels, but this is a very bad plan, since it checks the ventilation, and moreover it is undesirable as impeding the passage about the mine. Again, there may be reasons for the ore at certain parts being kept below; for example, the miners will often keep it under their feet till such time as it can by raised. In some cases, especially where the ground is worked by tutwork, it would be convenient to have adjoining the shaft some means of storing the mineral. This in the West of England is usually termed a plat, the variety now ordinarily used is called a tip-plat. Where the level opens into the shaft, for a distance of 2 or 3 fms. back from the shaft, or in some cases as much as 6 fms., a stope is taken generally about the same height as the level, and the rails for the level will be continued over this stope by a framework of timber. The wagon will, therefore, be run on to the framework, and the material tipped into the space below, where it will accumulate until the drawing apparatus is ready to raise it. In some instances arrangements may be made by which the material can be stored in boxes, which have a sliding bottom, and a stout door, so that the kibble can be brought to the side, and the material tipped into it. The angle of the upper portion of the level above the plat should be taken off, so that the rope may not be injured when the kibble is drawn aside. In weak ground the plat has to be supported by wall plates, lagging, &c. In some of the continental mines still greater attention is paid to the means of accumulating the mineral. Thus, in the Hungarian mines of Schemnitz, a district where it is desirable to separate the ore into several classes, the division of the shaft is more looked to, and a large plat, as long as the shaft, is made, and divided into as many divisions, and then the wagon is tipped into one or other division of the plat, according to the nature of the charge. When such a plat has to be carried out in ground of a somewhat difficult character, it is usually the case that the timbering of the shaft and level will be put in temporarily at first; then when the level and stopes have been established to a sufficient extent the plat is formed, and the timbering completed. The plat is begun half the height at first, at the two ends, leaving a central solid pillar. After driving a short distance, anything put in to support the roof will have to to rest upon longitudinal sole pieces by means of leg pieces. Laths are driven in at the sides and above where they are required. The plat will then have to be enlarged by taking another stope below, and as it advances supporting the longitudinal piece by putting uprights under it. Then, when the two sides are driven to a certain distance, comes the taking away of the central pillar and the permanent timbering. As we get in a longitudinal cap piece will be put in transverse to the first cap pieces, and will rest at the corners on large wedge pieces, which will again rest on longitudinal leg pieces. Across the top transverse pieces will be placed at some distance asunder, assisted by laths, or it may be close together. By inserting only a single one of these strong beams at a time, and as soon as it is got in wedging it up by these wall pieces, we shall get a very strong structure, and shall be able to remove the temporary timbering. On a far larger scale are the magnificent plats which have been put in of late at Przibram. Two or three years ago the lecturer found them putting in plats at the 27th level, which were to be 6 fms. high, 6 fms. long, and 3 fms. wide. Sometimes the places into which the ore falls are made to converge towards the bottom, so as to enable you to put in a sort of door, or trap. The filling can be done in such a plat (German, *Füll-ort*) by simply running a wagon underneath, and then opening the door. A suitable length for such a plat is 6 fms., and the whole is built partly of brick and partly of stonework.

The division of the shaft may be effected by putting in a repetition of part of the framework, props or studdles, and then lining these with a casing of strong plank. This point has not been overlooked in the Act for the better arrangement of metallic mines; for the men to be hoisted in the same shaft where the mineral is being raised is very dangerous. Where a separate shaft cannot be used the division can be simply effected by spiking a casing of planks to strong beams across the shaft. In the North of England this kind of division has been put in for the separation of the currents of air, and under these circumstances such bratticing is a point of very high importance. In some cases it has been by strong strong planks spiked to the buntons, in others by solid timbering, 4 or 5 in. thick, piled up one above another. The division may sometimes pass across as a diameter, in other cases it will be nearer to one side, especially where there are pumps, the larger division may be again divided into two, but the drawing shaft is commonly separated from the upcast only by buntons. At other times the primary division will be into three or four parts. The annals of last century furnish some very bad cases of the brattices catching fire from the ends being too near the ventilating furnace. On this account, and since an explosion is liable to blow out the brattice, and thus destroy the ventilation at a time when it is most vitally necessary, it is altogether better to have another shaft. The brattice may be made of brick or stone, and then it becomes very expensive, but, nevertheless, where there is any danger of fire the importance is very great.

If we come next to consider the application of masonry to the securing of shafts, the simplest case we find is where the shaft is put down in the lode with its sides represented by the sides of the lode. Where the material is dug out of the lode itself, a great part of it may remain as deads, to be stowed within the walls. A piece of timber is put in as a bearer, supported it may be against a head board, and on it is stacked the stone got out of the lode. As soon as the pressure begins to be felt from the sides you have within the walls a good strong buttress to withstand the pressure. Sometimes water, with a little lime, or oxide of iron, or other substance in solution cements these loose masses into one very solid mass. Usually this sort of packing is merely of dry stone, but in some cases, where you have a suitable material near, you may throw a flat arch across, with the proper abutments cut for it in the sides, and this may be 2 or 3 ft. thick. This gives you a suitable sort of security so long as the pressure is not within the walls, which it is not likely to be. When the longer sides of the shaft require to be protected the question of walling becomes more serious. In some cases in parts of Belgium and England, where there is an abundant occurrence of clay, bricks are made specially adapted to the curvature of the shaft. In all the cases that we have been considering to-day it must be remembered that there is this disadvantage—before we can put in any permanent structure we have first to go down to such a point as will give us a secure and firm foundation. In the mines of Saxony, where the sides of the shaft require to be secured, stonework is put in on the sides in the form of successive arches, while on transverse arches attle or loose stone will be built up for a distance of 1 or 1½ fm., and then the arching repeated; the temporary timber being removed gradually upwards as the arching proceeds. It is best to remove the temporary timber altogether, that no empty spaces may be left behind. Where the pressure is great on all sides each of the four sides has been arched; some pretty walling of this kind has been carried out with the lias limestones of the district. This arched form is, however, only a transition to the circular form, which is the strongest. In most of our own colliery districts the shafts are secured with stone where there is plenty; in other cases bricks have taken its place. At the present time lining of shafts is carried out much more generally than it used to be, since many of the shaft accidents were due to the non-protection of the sides.

In securing circular shafts a couple of strong balks will be placed across the surface ground, having the shaft between them. Then the foundation for the timbering of the shaft itself will be by putting in of curbs or cribs—circular frames of wood, which must obviously consist of a number of segments. Where not required to be permanent the segments do not require to be of any great thickness, and if brickwork is to follow they will generally be made of the same size as the bricks. These curbs used to be made of pieces of oak fitted together, or simply abutting, or one cut so as to overlap the other. Of late years the curbs have been made of cast-iron. Behind these a planking of 9 or 10 ft. planks is driven down, and if we are employing the method of spilling these planks will be made to fit to each other very carefully. The curbs will be held together by stringing deals or laths. In this way the pit will be put down from the surface till you reach such a foundation as leads you to expect that you can base on it a satisfactory lining of brickwork. At this point the shaft will be widened, a little pit being sunk below for the accumulation of water during the process. The cutting will be done by pick, or hammer and gad, or by any method except blasting, so as not to injure the ground. Then a curb is put in, now usually of cast-iron, and above this will be built the walling. The curb need not be solid, quite as commonly it is cast in a hollow form. The precautions to be taken are that the bed should be very smooth and perfect, and that between the segments of cast-iron there should be thin sheets of deal, so as to give a perfect joint when pressed together. And if we are careful about not letting any water through the joints, wedges of wood will also be driven between the deals. As the walling is built up all hollows behind are carefully filled up, so that nothing can fall suddenly on the brickwork. In this manner one of the segments will be completed, then another segment will be proceeded with in like manner below the first, and when the second casing of brickwork has been built up the bracket of ground between it and the first will gradually be removed, and the lower brickwork will be built close up to the upper. In some deep shafts, as that of Dukinfield, in Cheshire, bricks of unusual size, specially made to fit the circle, have been used, and at every 8 yards a strong coursing of stone put in for the purpose of getting a firm hold on the measures; this we may regard as a curb. In some of the old pits a circular lining was placed on a square curb.

NORTH OF ENGLAND INSTITUTE OF MINING ENGINEERS.

At the general meeting of members held in the theatre of the Institution of Civil Engineers (by permission of the council thereof), Mr. LINDSAY WOOD (president) in the chair, the second day's proceedings commenced by the reading of a paper

ON THE LARGER DIVISIONS OF THE CARBONIFEROUS SYSTEM IN NORTHUMBERLAND.

BY G. A. LEBOUR, F.G.S.

The previous views on the subject were explained by reference to the papers of N. J. Winch (1814), Wm. Smith, Westgarth Forster, the late Geo. Tate, Howse and Kukby, and others, and it was then observed that according to the present division for Northumberland by the Geological Survey they had coal measures, ganister beds, millstone grit, and carboniferous limestone series, including some beds above the highest limestone. The coal measures were recognised by all, but there was some difference of opinion as to the classification of the ganister series. It would, perhaps, be safest to admit the ganister beds in Northumberland as a small subdivision of the coal measures; and Mr. Lebour would prefer to consider the ganisters as a sub-genus of the genus coal measures. The millstone grit raised a more important question. Almost everywhere the coal measures (with or without ganister) overlaid an unproductive Farewell rock, formed of conglomerates and grits, so coarse as frequently to justify the term millstone grit. In some parts of England the millstone grit attained an enormous thickness, but in Northumberland the grits were sadly deficient, both in character and thickness. It had, then, a lithological character which it did not share with members of the series above and below; it had no distinctive fossil remains, and nothing peculiar but its position. Taking these facts into consideration he ventured to place the millstone grit of Northumberland in the same category as the ganister beds; that was to say as the lowest member of the coal measure or upper carboniferous group. Another difficulty cropped up as to where the base limit of the millstone grit should be drawn, and the top of the highest limestone of the limestone series seemed to offer a good common-sense boundary line. The Yoredale rocks of Phillips had no claim to recognition as a separate division in that part of England, and he proposed that it, together with the so-called scar beds below, be united into one great formation to which the name of "Bernician" might be attached, thereby denoting the state of things occurring in Bernicia as distinguished from that obtaining in Scotland on the one hand, and in Yorkshire on the other. He was inclined to advance the hypothesis that the lower portion of the Bernician series merged by degrees laterally into the Tuedians, when the grits line would be merely one of local use; but as far as Northumberland was concerned, Mr. Lebour would give to a line separating Tuedian from Bernician beds merely the kind of value that would attach in a mass of the present sea bottoms to a boundary dividing the sands and muds off the british coasts from the contemporaneous globigerina ooze of the deeper ocean. To the north the dividing line was a good one, and it would be difficult to say at what point in its southward course it ceases to be so; but there was good reason for believing that Northumberland afforded the "passage" locality between two members of a great series. The base of the Tuedians they did not there know, as they could not admit that the so-called Upper Old Red Conglomerate was anything more than part of the Tuedian series. Should those beds ultimately prove to be really Upper Old Red, no great mistake would be made in awaiting the event. In conclusion, he thus summarised the changes which he proposed to make:—

1.—That the coal measures proper, the ganister beds, and the millstone grit as far down as the Felltop limestone, should be grouped together as stages of the upper carboniferous in Northumberland.

2.—That the Yoredale rocks and the Scar limestone series, the calcareous group, be abolished as incapable of natural division, and that the beds comprising them be blended together into one great series, the Bernician forming the upper member of the lower carboniferous in Northumberland.

3.—That the so called Upper Old Red in this county be merged into the Tuedian series, and that the two together form the lower member of the lower carboniferous in Northumberland.

4.—That the divisional line between the Tuedian and the Bernician being one which here separates conditions of deposition rather than rigid horizons, be regarded as a variable one in Northumberland.

The subjoined table shows the proposed changes:—

		Northum. proposed.	Synonyms.	
Carboniferous.	Upper.	Coal meas.	Coal measures	Upper Carboniferous.
		Gan. beds	Ganister beds	
		Millstone grit	Millstone grit and Carbon. limest. in part	Middle Carboniferous.
	Lower.	Bernician	Yoredale series and Calcareous group in part Scar limestone series and Calcar. group in part, *plus* Carbonac. group	
		Tuedian	Calciferous sandst. or Tuedian, or Valentian, and Upper Old Red Congl. in part.	Lower Carboniferous.

Mr. E. F. BOYD would like to know Mr. Lebour's opinion as to the probable effect produced on the horizontal limestone strata of the district, as they approached the plutonic rocks of the Cheviots, for Mr. Lebour seemed to have confined his researches to the wider portion of Northumberland, whilst he had himself had most to do with the narrower and more northern portion of the county. At Rodham he searched diligently to obtain the desired information, but there the conglomerate appeared to have been rolled down the valley, and the upper portion of the debris seemed to have been hardened and overlaid where the horizontal would have come into contact with the plutonic rocks. The mountain limestone might require some such subdivision as the author of the paper proposed.

Mr. J. B. SIMPSON enquired whether the beds in the district referred to had been so far examined as to enable them to say whether any of them were referable to the ganister beds of Yorkshire. He believed that at Tudhoe a boring, 100 fathoms deep, did not reach ganister.——Mr. BOYD could scarcely answer that question. The core of the diamond borer brought up had shown that the whole of the carboniferous series had been passed through, but he did not notice whether ganister beds were included. They, however, had the ganister beds developed near Edmundbyers, in Durham.

Prof. WARINGTON SMYTH said that the district referred to in the paper had attracted his attention for many years, although he had never had an opportunity of visiting it. There was doubtless a very large field for considerations of this character, but when they approached the limits of any such geological divisions, they always met with difficulties in drawing hard-and-fast lines, and he thought it was desirable not to attempt to draw these too closely. He might, therefore, say that whilst listening with interest to Mr. Lebour's paper, he felt a little alarmed lest too great a tendency should be manifested of doing away with those old lines of division, and introducing new terms only applicable to one district. The mountain limestone itself, when followed down to the Old Red Sandstone, left a large field for research, and he hoped the present paper would tend to further researches in the same direction, but we must endeavour to adopt a nomenclature applicable to other districts. Every proposition for a new nomenclature must be looked at with the greatest caution, for the lower carboniferous formation of Russia can only be judged of accurately by reference to the corresponding formations of the North of England and part of Scotland. While upon this subject he might mention a point in connection with the probable discovery of large carboniferous formations where it had always been considered impossible that they would be found. He had recently been told of a bore-hole having reached coal in North Belgium, where it was not believed that such a thing as coal measures existed, and which showed the extension of the upper and lower divisions of the coal field of the Ruhr valley. The discovery to which he referred had been proved for 50 kilometres in length, and the result is that they have already increased the proved extent of the Belgian coal fields by about 12 kilometres. Some gentlemen had undertaken to bore near Maestricht, and within the last two months they had come upon seams of coal of workable thickness at 200 metres from surface, so that they would have to modify their ideas as to the extent of these coal fields when they found them overlaid by some of the newer rocks.

Mr. LEBOUR, in replying to the several points raised by the discussion, remarked that he thought the conglomerate, referred to by Mr. Boyd, was simply what Tate regarded as the Upper Old Red, and that what Mr. Boyd had found at Rodham was nothing but porphyritic drift. He believed that the porphyry mass of the Cheviots was formed long before the deposition of the carboniferous beds, but the carboniferous beds had since that time been upheaved, and in some places they were lying flat on the porphyry, while in others they were nearly vertical. He was glad to hear that Mr. Simpson had been unable to find any ganister beds in Northumberland, for it confirmed his opinion that ganister beds in Northumberland were in no properly defined position as they were in Yorkshire. With regard to Prof. Smyth's charge that he was introducing new terms he thought he had worked, he certainly intended to work, in the opposite direction, by combining already accepted divisions upon more general heads; he had in some cases made new divisions of the old ones, and meant the names which he proposed to be employed simply for local distinction. He had been grouping existing divisions rather than making new ones.

Upon the proposition of Mr. T. J. BEWICK, the thanks of the meeting were unanimously voted to Mr. Lebour for his paper, and the President then called for that—

ON COOK'S VENTILATING MACHINE.

BY WILLIAM COCKBURN.

This paper was of such inordinate length and made up of such threadbare materials, in the shape of extracts from old volumes of the Transactions of the Institute, and matters with which all the members were perfectly familiar, or which were altogether irrelevant, that the whole assembly became irritated and impatient, until at last a member suggested that as Mr. Cockburn had occupied the meeting for three-quarters of an hour without mentioning the subject to which the paper was supposed by its title to refer, he would (much as he regretted having to interfere with any gentleman who brought a paper before them) propose that he be earnestly requested forthwith to give them some description of the machine he was interested in, or some details concerning it. The suggestion was accepted by Mr. Cockburn, who then explained that it was his intention to settle the question of centrifugal *versus* varying capacity fans. All experiments with Cook's apparatus had been eminently satisfactory. They differed materially from the original ventilator built by Twyford and Gardiner, and their useful results were far in excess of those first obtained. The chambers of capacity consisted of two cylindrical chambers, each 21 ft. 8½ in. diameter and 11 ft. 6 in. long in the clear, and arranged opposite each other, in one centre line, upon one shaft. The casing of the chambers was wrought-iron plates 5-16th in. thick, with butt joints and lapping plates, riveted with ½ in. rivets. Each casing was supported and kept in position by 17 ft. 1 in. iron girders and two iron rings, riveted to each of the side girders; the outside edges of the casings were connected to cast-iron sides by angle-iron rings. The sides of the casings were cast iron, strengthened with ribs, and cast in plates, about 5 ft. wide, and all the inside faces were planed up, so as to allow as small a passage as possible for the escape of the air between the drums and the sides. Those sides were bolted to strong cast iron girders, running the whole length of the machine, and secured to the foundations; they were also tied together at the top by cast-iron girders, so arranged as to carry the shutter shaft independent of masonry. The drums were eccentric, and 15 ft. diameter by 11 ft. 6 in. each; every drum was accurately balanced on the shaft. The shutters were formed of four cast iron arms, and keyed on to the shutter shaft; the arms were covered with sheet-iron 3-32d in. thick, and bent at the lower end to a radius of 3 ft. 9 in. The outside drums for working the shutters were wrought iron 11 ft. 3 in. centres, turned and bored, and the shutter connecting rods were wrought iron. The ventilator was worked by a wrought iron crank 3 ft. 9 in. centres, keyed on to the end of the crank shaft of a semi-portable engine. In the first ventilator made the full useful effect could not be brought out, owing to the faulty construction, but in the machine he had just described everything had been found to work satisfactorily. The second and improved ventilator, situated at Upleatham, had been at work over 19 months, and the third ventilator, at Lofthouse, over 10 months. Taking the consumption of fuel for over nine months it was found to be close upon 3·9 lbs. per indicated horse-power and 6·07 lbs. per effective horse-power per hour, with an average discharge of 108,000 cubic feet of air per minute from Upleatham, and 106,000 cubic feet per minute from Lofthouse. The useful effect obtained at Upleatham was 63·6 per cent. and at Lofthouse 62 per cent. Mr. Cockburn then proceeded to the comparison of the useful effects got out of the centrifugal fans by himself and friends at various places. Had a Guibal fan been in use at Upleatham the consumption of fuel for 13 months would have been 958 tons, against 779. He had also calculated that there was a clear gain in useful effect of 35 per cent. in favour of Cook's ventilator. On the result of the experiment he had made he considered he was fairly justified in stating that Cook's ventilator had an advantage of 24 per cent. over Guibal's fan, and that the superiority of the varying capacity fans compared with the centrifugal class was fairly established.

Mr. PIERCE suggested that if this system of ventilation were used one cylinder should be placed at each end of the shaft.

Mr. COCHRANE said he had been appealed to upon the question of the centrifugal system as compared with the variable capacity system, and was compelled to make a few observations in favour of centrifugal fans. It was impossible to follow the figures given by Mr. Cockburn, the paper not being printed, or to be prepared with figures to refute them; but he would ask him whether the experiments referred to were the same as those made for the purpose of the paper recently read before the Mechanical Engineers?

Mr. COCKBURN said that most of them were, but some new ones had since been added.

Mr. COCHRANE said that that being so, he would remark that the mistakes which he charged against the experiments with centifugal fans must be due to misapprehension. In every experiment made the utmost care had been taken to ascertain the velocity of the current, and the results had always been checked by observations in the intakes and in the returns, so that when, as in Cook's machine, there were leakages they could not fail to be discovered. They would see at once that Cook's machine was subject to certain leakages, due to clearances which it was absolutely necessary to have between the eccentric drum and the casing. These clearances were about three-sixteenths of an inch, and the effect must be of necessity that all the air that entered the chamber was not discharged. The amount of air that re-entered must increase with the higher water-gauge at which the machine was worked, so that at last a water-gauge would be reached at which the delivery of air by the machine would cease altogether. He knew this was a water-guage they were never likely to reach, but he mentioned it to show the importance of attending to the question of loss of work done. He might explain that with a 1-in. water-gauge 18 per cent. of the air (calculating the cubic capacity) re-entered the machine, and at a water-gauge of 3·25 in. 27 per cent., or one-fourth of the air, re-enters the machine. It was pretended that in this machine they had a real piston, but that was not the case. The 15 years' experience they had now had of centrifugal ventilators had taught them enough with regard to mechanical ventilation to convince them that variable capacity machines do not promise to be the best means of ventilating mines;

the principle was, in his opinion, the wrong one. He had said there was a water-gauge at which the Cook machine would do no work at all; at 43 in. there would be no delivery of air. Of course, they were only working at 6 in. at the utmost at the present time, but they must not lose sight of the fact that at that the loss was enormous, and at 10·98-in. water-guage it would give only 50 per cent. of the air represented by the total capacity of the machine. There must be much wear and tear in the machine, and he believed it would prove to be a greatly deteriorating one as they worked it, as the clearances would constantly increase. As the subject, however, could not be properly discussed without the figures before them, he would suggest that the discussion should be adjourned until the paper was in print.

Mr. J. B. FOSTER had much pleasure in inspecting the diagrams which had been prepared to illustrate the paper, but concurred with Mr. Cochrane as to the desirability of adjourning the discussion.

Mr. COOK agreed with the proposition to adjourn the discussion, but would remark that if it could be proved that they need not have more than one-eight of an inch clearance, and that the wear and tear was not excessive, he thought they would admit that the machine was a good one. Mr. Cochrane's objections were, no doubt, justifiable, but they were due to a defect in the machine, which had since been remedied.——Mr. GRIFFITHS could scarcely follow Mr. Cochrane's reasoning that the higher the water-gauge the greater would be the proportion of loss.

Mr. COCHRANE would try, then, to state it more plainly. The cubic capacity of the machine is 4530 cubit feet. At 1·56-in. water-gauge it delivered only 4200 cubic feet of air; and at 3·25-in. water-gauge it delivered but 3292 cubic feet of air. The measure of the increased loss was the volume of air which they had *not* got.

Thanks were then voted for the paper, and, in acknowledging the compliment, Mr. Cockburn stated that the fans could be laid open to the members of the Institute to have the experiments made.

The PRESIDENT observed that the time for adjournment having arrived, he would suggest (and it was unanimously agreed) that they should take as read the next paper—

THE MECHANICAL EFFECT OF "BLOWN-OUT SHOTS" ON VENTILATION.

BY MESSRS. HALL (H.M. INSPECTOR) AND CLARK.

An opinion is frequently expressed in Lancashire and elsewhere that in blasting coal with gunpowder in a mine fairly clear of fire-damp, an explosion may result from the exhaustive action of the blast itself. It is held that a shot fired under certain conditions will relieve the atmospheric pressure on the face of the coal to such an extent that fire-damp will be instantly given off in considerable quantity, and that in very fiery seams the danger from this source is imminent. The circumstances under which this is stated to be most liable to arise are these—When in driving a narrow winning or heading, and having advanced some distance beyond the innermost holing or cut through, a charge of gunpowder is so improperly planted or insufficiently stemmed as to cause it to blow out, and spend its energy on the ventilation passing along the heading instead of doing its legitimate work of blowing the coal. Such an occurrence is locally termed a blown-out shot. It must not be confounded with that with which all miners are familiar, called in Northumberland a "standing bobby." In this latter case the powder expends itself by ripping the coal, and escapes, as it were, by distribution, without affecting the ventilation, and generally leaving the stemming in the drill hole.

A blown-out shot would appear to attain its maximum force when it occurs in very strong coal, where a heavy charge is necessary, and the stemming has been fairly well done, so that it withstands for an instant until the exploding powder, rapidly gaining accumulated power through the heat of its own combustion, forces itself out, driving the stemming as from a cannon. We, perhaps, hear more about these shots in Lancashire than in other districts on account of the coal being so very strong, and the unfortunate practice of shooting partially fast—that is, without nicking or side cutting—entailing heavy charges, amounting in many instances to 2½ lbs. of gunpowder, or even more. Indeed, locally this subject has assumed very great importance, many mining men of considerable experience having given it as their opinion that some of the recent disastrous explosions have been due to this cause alone. Notably, an explosion at the Wynnstay Colliery of the New British Iron Company, near Ruabon, on April 24, 1873, in which seven persons lost their lives. The position of the shot holes was shown by the aid of a plan of the workings, and the evidence taken at the inquest was referred to, in the course of which Mr. Thomas Bell (H. M. Inspector) said—"One of two things must have occurred; either the first shot liberated gas, which was fired by the second, or one of the shots having blown out would cause a partial vacuum in the place which would be immediately filled with gas from the cavities in the coal, and would at once become mixed with sufficient atmospheric air to make it explosive, and this might be ignited by burning embers left by the shot." The jury said—"That from the evidence before them the accident occurred from an explosion of powder arising from the drill-holes not being sufficiently bored, and the stemming being improperly secured."

The writers do not think it desirable that they should express any opinion on this particular case. It is men ioned rather to show to the Institute the very serious results that have been, and which continue to be, attributed to this cause, and it is hardly necessary to point out how highly important it is that the subject should be thoroughly investigated, with a view to proper precautions being taken if they prove to be needed. This subject has special interest at the present time, because there is a tendency to impute to blasting in mines results and dangers which it is questionable whether this operation when fairly carried out does really entail. It was with the object of gaining some reliable information as to the actual effect of blown-out shots, which are no doubt the worst aspect of blasting, that the experiments, the details of which we propose to lay before you, were undertaken, and with the hope that this beginning might lead to discussion and a thorough investigation. If it is true that people are maimed and burned by blasting at distances varying from 10 to 180 yards, when there is no fire-damp present to cause such destruction, then it is quite clear that this results, either from the simple force and flame of the shot on account of the weight of the charge; or, from this force and flame assisted by the rapid combustion of coal dust as it travels on its course; or, from the force and flame assisted by an instantaneous emission of gas, in consequence of a partial vacuum being formed by the rushing blast.

With a view to testing the first of these assumptions—that the havoc is caused by the unassisted gunpowder contained in the charge—varying charges were fired from a strong iron tube, 2 ft. long and 2½ in. diameter, at the face of a slant or adit which had been driven down from the surface and arched with brickwork a distance of 45 yards, its sectional area was 30 ft., which would fairly represent a winning or heading. The stemming was done with small debris, and the mouth of the cannon directed so that the discharge might pass freely up the slant. Gauze sheets of thin and easily inflammable material were suspended at intervals of 15 ft., by means of cross pieces of timber reaching from about two thirds the height of the arching nearly down to the thill, and in each cross-piece small holes (1 in. diameter and 2 in. deep) were drilled so as to face the blast, and these were filled with fine gunpowder.

EXPERIMENT No. 1.—Fired 1¼ lb. powder: Canvas and cross-piece at 15 ft. knocked down, but no appearance of flame having reached this distance.

EXPERIMENT No. 2.—Fired 2 lbs. powder: Canvas and cross-piece at 15 ft. knocked down, but no appearance of flame having passed.

EXPERIMENT No. 3.—Fired 2¼ lbs. powder: Canvas and cross-piece knocked down at 15 and 30 ft., but no appearance of flame.

EXPERIMENT No. 4.—Fired 2 lbs. powder: Canvas and powder burnt at 15 ft.

EXPERIMENT No. 5.—Fired 2½ lbs. powder: Canvas and cross-piece knocked down at 15 and 30 ft., but no appearance of flame.

These experiments were continued, but in no case was either canvas or the powder burnt beyond 5 yards from the point where the shots were fired. The tube was afterwards stemmed very tight so as to cause the explosion to burst it, but the flame travelled no further in this case. The blast at the mouth of the slant (45 yards) was certainly perceptible, but comparatively unimportant.

To test the second assumption—that the force and flame are assisted by the rapid combustion of coal dust as it travels on its course—a similar tube was used, the stemming in this case being small coal; gauze sheets and gunpowder were fixed, as before, at intervals of 15 ft. in the slant; the thill for 8 or 9 yards from the face was thinly covered with coal dust obtained from the screens.

EXPERIMENT No. 1.—Fired 1½ lb. powder: canvas and powder at 15 and 30 ft. burnt; at 45 ft. not burnt; blast at mouth of slant very strong.

EXPERIMENT No. 2.—Fired 2 lbs. powder: canvas and powder at 15, 30, and 45 ft. burnt; at 60 ft. not burnt; blast very strong, knocking down the three nearest cross pieces.

EXPERIMENT No. 3.—Fired 2¼ lbs powder: canvas and powder at 15, 30, 45, and 60 ft. all burnt; blast at the mouth of the slant, a distance of 45 yards, very fierce, lifting and driving a metal pipe, weighing nearly ¼ cwt., 15 yards, and moving a coal tub on the pit heap, 75 yards distant.

EXPERIMENT No. 4.—Coal dust having been scattered on deals the whole length of the slant (the hill being very wet), fired 2¼ lbs. of powder: in this case flame issued strongly at the mouth of the slant, having travelled 45 yards. The blast was very fierce, and would certainly have proved fatal to anyone struck by it in its course. It was noticeable in these experiments that not only the flame was largely increased, but the blast was also proportionately greater. And bearing in mind that the floor of the slant was very wet, the roof dripping, and the temperature low (50°), we may fairly assume that in dry mines, at a high temperature, and where the roads are always thickly covered with fine dust, that this dust will play a considerable part in extending and adding to the destructiveness of an explosion.

To pass now to the first part of the third assumption—on any partial vacuum being formed in a colliery working there is an instantaneous emission of fire-damp. It is, of course, well known that any relief of atmospheric pressure causes fire-damp to be given off more freely; but since natural variations of this description are gradual, and occur within narrow limits, it is usually quite practicable to deal with them without much difficulty. But the assumed condition is much more serious than this, and, at any rate, may be supposed to amount to a relief of one half the natural pressure, or 7 or 8 lbs. per square inch, and this occurring in an instant. For the purpose of testing the result of such a sudden and unusual occurrence in a mine a wrought-iron pipe, 4 in. diameter and 4 ft. long, was procured, and fitted with a piston and a vacuum-gauge. This instrument when tried experimentally registered a vacuum of 13 lbs. It was then taken underground, and a hole having been drilled 18 in. deep into the coal on the side of a level in the Bastian seam (360 yards deep), was inserted and wedged as air-tight as possible with wooden wedges. On the piston being drawn once rapidly back the gauge registered 2½ lbs. for an instant, but the issuing fire-damp seemed immediately to fill the tube, and quickly balanced the outside pressure. Then forcing the piston forward fire-damp was driven in large quantities through the coal in various places at some distance from the point where the pipe was fixed, and on being lighted had the appearance which they illustrated. The gauge was now taken off, and the fire-damp allowed to escape through the aperture; the issuing gas was in this case sufficient to feed a flame 3 ft. long. The pipe was next inserted in the face of a heading in the Wigan Nine feet, one of the most fiery seams known (190 yards deep); on the piston being drawn back fire-damp followed instantly, no vaccuum being shown. On account of the dangerous character of the seam we did not attempt to burn the gas on making the return stroke, but there was evidently a large quantity forced through the coal, as in the last experiment. The next trial was in the Pemberton Four feet (240 yards deep), a seam considered to make very little gas, but the result was the same, large quantities being driven out, and it was then lighted.

Although the superficial area of coal exhausted in these experiments was very small, amounting only to a few inches, the quantity of fire damp given off was very remarkable; great care was taken to burn it, yet in one instance a rather serious quantity collected about the roof. The writers have not as yet succeeded in proving an affirmative as regards the second part of the third assumption—that a partial vacuum is formed by the rushing blast from a blown out shot. The following experiments with this object have been carried out;—A boiler was procured 24 ft. long and 6 ft. diameter, and having closed all the openings with the exception of one end, a vacuum gauge was attached, and charges of powder varying from ½ to 1 lb. fired from a tube fixed at the closed end, and so directed that the blast might pass freely towards the open end. A number of shots were fired, but in no case did the gauge register any vacuum. A small mercurial gauge was also fitted on, but this was put out of order by the vibration. Having failed with the boiler, the downcast pit, in connection with the slant, was next closely covered with deals and sand, and 2½ lbs. of powder fired, but the gauge still refused to show any relief of pressure. It was noticeable in this last experiment that through the ventilation being entirely cut off, the effect of the shot was very slight as compared with similar charges fired when the air was passing freely. We hope at some future time to carry these experiments further, and record the result, as it seems quite impossible that there should not be a considerable relief of pressure, may be only for an instant, but still appreciable, because the expanding gases from the powder come in contact with the air passing as ventilation after having attained considerable velocity, and must necessarily reverse its direction, and meantime these gases are cooling down, and their pressure rapidly diminishing.

In conclusion, the writers feel confidence in submitting as the result of their observations and experiments—

1.—That flame from a blown-out shot, unassisted by gas or coal dust, does not travel further than 5 or, at the utmost, 10 yards, entailing little or no danger.

2.—If coal dust be present even in a comparatively damp mine, this flame may travel 50 yards; that in a dry mine of a high temperature this distance would be greatly exceeded; and since miners, as a rule, consider themselves safe at from 15 to 20 yards from the point where the powder is being used, a blown-out shot, under these circumstances, is a source of great danger.

3.—That the violence of the blast from either gunpowder or fire-damp is much increased when coal dust is present.

4.—That on any partial vacuum being formed in an underground coal working, fire-damp will instantly issue in dangerous quantity; and there are fair grounds for assuming that a shot blowing out in the face of a narrow heading, and setting coal dust on fire in its course, would by its exhaustive action produce such a vacuum, and might cause a serious explosion in a mine practically clear of gas.

5.—Although no experiments have been made directly to test the result of coal dust set on fire in air heavily loaded with fire damp, there is every likelihood that such an occurrence would be attended with grave consequences.

6.—That it is desirable that any system of blasting coal which entails heavy charges of gunpowder and an unusual liability to shots blowing out, such as blasting without side cutting, or nicking, or using improper material for stemming, should be discontinued.

7.—A large body of flame, such as results from a very heavy charge or from a blown out shot, is required to ignite coal dust; that in blasting with charges not exceeding 12 ozs., accompanied by the proper preparation of holing and side-cutting, there is little liability of this taking place. As these experiments progressed the important part which coal dust seemed to play was forced upon the writers' attention.

We find some interesting remarks as to the amount of work stored up in coal in a paper forming part of the Philosophical Transactions of the Royal Society, published in November, 1875, contributed by Capt. Noble and Mr. F. A. Abel, entitled "Fired Gunpowder." They state—"It is interesting to compare the above work of gunpowder with the total theoretic work of 1 gramme of coal, which is about 3,400,000 gramme units. The work stored up in 1 gramme of coal is, therefore, more than ten times as great as that stored up in 1 gramme of powder (332,128 gramme metres). The powder, it is true, contains all the oxygen necessary for its own combustion, while the coal draws nearly 3 grammes of oxygen from the air. Even allowing, however, for this, there is a considerable inferiority in the work done by gunpowder, which is, doubtless, in part due to the fact that the coal finds its oxygen already in the form of gas, while a considerable amount of work is expended by the gunpowder in placing its oxygen in a similar condition. In an economic point of view, also, the oxygen stored up in the gunpowder is of no importance, as that consumed by coal costs nothing, while the oxygen in the powder is in a most expensive form. The fact is, perhaps, worth noting as demonstrating the impracticability of making economic engines deriving their motive power from the force of gunpowder." Now, it would appear to follow from these remarks that if coal could be consumed with a rapidity at all approaching that of gunpowder, then it would partake somewhat of the nature of an explosive. Perhaps the fact that it has to obtain its oxygen from the surrounding air is in the way of its attaining anything like instantaneous combustion, but we must bear in mind that, when finely disseminated in air of a high temperature, it is certainly in a condition most favourable to rapid combustion.

SOUTH STAFFORDSHIRE AND EAST WORCESTERSHIRE INSTITUTE OF MINING ENGINEERS.

On Thursday evening a quarterly meeting of members was held at the Midland Institute, Birmingham. In the absence of the President (Mr. Thomas Latham), the Vice-President (Mr. Thomas Parton, F.G.S.) presided. There were also present Messrs. W. Blakemore, W. Spruce, J. Lindop, J. Hayward, D. Rogers, Hy. Johnson, Alex. Smith (secretary), &c. The following gentlemen were elected members:—Mr. G. F. Hatton, coalmaster, Great Wyrley; Mr. H. Hughes, coalmaster, Lower Gornal; Mr. W. Farnworth, coalmaster, Swindon; Mr. W. Ward, mining engineer, Madeley Wood; and Mr. D. W. Lees, Willenhall.—The Secretary reported that the excursion to the Lye Cross Pits (Lord Dudley's) would have to be put off until September, in consequence of the absence of the President in America. The trip to Oxford was to be held in August next. He had written to Mr. Smith-Shenstone, who had been a fellow of one of the colleges, and that gentleman, in a very kind letter, had offered to conduct a party over the city and show them the university. After a discussion as to the trip, Mr. Morrison moved that the excursion should be for three days, and that two should be spent in London, the School of Mines in Jermyn-street and Woolwich Arsenal to be visited. This was unanimously agreed to. The secretary (Mr. Alex. Smith) explained that the digest on the Explosives Act was being prepared, and would shortly be presented.

The Vice-President read a paper upon "Coal-cutting Machinery."

ON COAL-CUTTING MACHINES.

BY THOS. PARTON, F.G.S.

Exactly four years ago, when there was experienced a great want of men at a high rate of wages, there was a lively attention paid to the important question of the practicability of using machinery for the purpose of cutting (or holing) the coal seams.

This operation in coal mining being the most costly and the absolutely necessary one, and the proper working of the mine being so dependent upon the regularity of this labour, and there arising at times so much difficulty in getting the men to work there *quota* of time in anything like regular periods, it became a matter of serious consideration whether or not these coal-cutters could be economically applied to the varied circumscances of the varied seams of coal in the country. In order to elicit information on this question as to what had been accomplished in this direction, the writer visited several collieries in the North. As a result of that inspection, a paper containing full particulars of a machine known as Winstanley and Barker's was read at an ordinary meeting of the Institute on June 3, 1872. It will not be requisite to reiterate those particulars, as the circumstances under which the same machine is now working at the same colliery, as seen by the writer a few weeks ago, is doing equal duty, to the satisfaction of the company. Four years' regular work in a seam of from 25 to 28 in., a seam that cannot be worked profitably by hand labour on account of its hardness to hole, is a good test of the practicability of a coal cutting machine.

This cutter, I may say, has for a two years' average cut at a rate of 25 yards per hour with a pressure of air of 22 lbs. The machine requires but minimum repair, and is worked by a Staffordshire man at a rate per ton. The economical results are most favourable, both as to cost of labour and proportion of round coal to small.

Mr. Hyslop, the author of the new work on Coal Mining, seems to have given minute attention to the working of coal cutters. In his work he gives a detailed report of the duty done by Messrs. Baird's cutter. It says—"It seems clear, therefore, that in suitable seams and circumstances machines will give steady work, improved coal, and reduced costs."

"Not having worked a Winstanley machine, I cannot speak so definitely of its performance, but judging from the experience at Barleith Colliery (where two Baird's and a Winstanley have been working together), and our experience at Cobinsham, I am inclined to think that the Baird is inferior to the Winstanley in the following points:—1. It requires more power.—2. It is more unwieldly.—3. It is more troublesome to adjust.—4. It requires extra labour."

"While in these points it seems inferior to Winstanley's, the two years working in a very hard seam at Barleith has shown its superiority in the following points:—1. In being reversible.—2. In its cutting power."

In consequence of the strike existing in parts of Yorkshire where other cutters are used, we have not been fortunate enough to inspect them at work, but very courteous letters have been received offering every facility for inspection, and containing various particulars. One refers to a machine called the Gillott and Copley patent, which is in work at several collieries in the North. This machine is adapted for any seam of 24 in. and upwards, and can arrange its cutters at any level, as the circumstances of the seam may require, and is self-acting.

It is made principally of steel and wrought-iron; the frame is of angle iron, about 5 ft. 4 in. long by 2 ft. 4 in. wide, on which are fixed two cylinders 7½ in. diameter, with a 9 in. stroke, working on to a crank shaft, which by a simple contrivance drives the pinion, which gears into the slots of the cutter wheel.

The wheel is of cast steel, 3 ft. 10 in. diameter, and makes six revolutions per minute; on its outer edge are fixed 26 cutters, thus giving 120 strokes per minute, making an under-cut of 3 ft. 4 in. by 2½ to 3 in. thick; the cutters are 4 in. long by ⅜ in. square. Its self acting or propelling arrangements are by a wire-rope passing round a snatch-block fixed at one end of the face to be holed, and working round a small drum fixed at the front end of the machine, which is actuated by a ratchet wheel and lever worked by an adjustable crank.

The top of the machine is covered by a plate of sheet-iron to prevent the roof from falling among the working parts. A fair average work with this machine is reported to be about 25 to 30 yards long by 2 ft. 4 in. wide, with a pressure of air of 27 lbs. In one economic aspect this cutter is doing good service—in producing a large proportion of round coal. Out of every 100 tons of hand-hewed coal, 3 ft. 4 in. thick, 50 tons only of round ore produced, the remainder being small, while the same quantity produced by the cutter gives 75 tons of round to 25 of small.

It should be needless here to state that the adoption of any kind of machinery which is calculated to supersede manual labour in the working of our mines is a desideratum devoutly to be wished for. When we consider the vast and marvellous transformation which has taken place in all our industries on the surface in the application of machinery, the valuable and intricate work which has been accomplished, and the wonderful strides of progress made, as the outgrowth of this application, we almost wonder that the busy world below ground presenting its labours under such disadvantageous conditions, has gone so far without utilising the same inventive power which has done so much on the surface.

Although a few attempts have been made in this direction during the past 30 years to apply machinery to do the work of the collier in cutting the coal, it is only of recent date we can say say it is both practical and economical to use coal-cutters under certain circumstances. It is for the mining industry to ascertain those favourable conditions, and apply as a means to extend such appliances as will lessen the risk of property and life, and increase the output of our fuel to cheapen its extraction.

After further inspecting the working of these machines it is our intention to be more definite in defining under what circumstances these coal cutters can be advantageously used.

Mr. J. Skidmore read a paper upon the working of the chemistry class connected with the Institute during the past year. The speaker held that during the time the class had done great good in disseminating a knowledge of the gas met with in mines, and in other branches of chemistry. It had helped the younger members of the profession to prepare themselves for the higher knowledge which the Legislature expected at the hands of mining engineers, and, in addition to this, it had added to the status and usefulness of the Institute. The Vice-President spoke strongly in favour of such classes, which would tend to save life and property. He should also be glad to see a class for applied mechanics. Mr. Blackmore said they were necessary to secure certificates. A vote of thanks was passed to Mr. Skidmore.

Mr. Alex. Smith read a short paper "On Landau's Safety-Lamp." The inventor claimed for his lamp that it was impossible to explode, the impure gas passing into the lamp from the bottom would at once extinguish the light.

An adjourned discussion on Mr. Thomas Parton's papers upon the "Responsibilities of Managers under the Mines Regulation Act" was continued. Mr. Tomson held that the small collieries of South Staffordshire could not support managers, sub-managers, and certificated enginemen. Mr. Parton held that nothing would prevent a manager having half-a-dozen collieries under his hand, providing he took the responsibility, and Mr. Morrison said that in Cornwall there were enginemen who looked after the engines of a dozen mines, and were responsible for their good order. Mr. Blakemore held out no hopes of any legislative change for some time yet, and the meeting unanimously concluded that the best plan would be to continue careful management, and take means for showing the collier how to carry out properly his share of the responsibilities of the mine. A hearty vote of thanks was passed to Mr. Parton for his papers.

VENTILATION OF COLLIERIES—THE GUIBAL FAN.

The question as to the best mode of ventilating collieries, especially those in South Yorkshire and other places where they are known to give off a great deal of gas, has been fully discussed, and it appears that the old-established furnace is fast being superseded by the fan. The former may be able to give even more ventilation than the fan, yet the system is not by any means so safe. At the Oaks Collieries, near Barnsley, where the fatalities have been the most serious known in the mining industry of the world, and where the minerals are being rapidly developed, the ventilating apparatus has been found inadequate for the large area of coal yet to be got. As soon as Messrs. Cammell and Co. (Limited) took possession of the colliery, rather less than a couple of years ago, the attention of the directors of the company was at once directed to the best means of ventilating the pits and ensuring the safety of the workmen. They came to the resolution that no expense should be spared to make the pits as safe as it was possible to make them, so they determined to erect a large ventilating fan with all the recent improvements. Messrs. Davey Brothers (Limited) were accordingly commissioned to erect a large fan 40 ft. by 12 ft. This was done, and on Tuesday it was tested in the presence of a considerable number of mining and mechanical enginers, colliery managers, and others connected with the West Riding. Amongst those present were Mr. Wilson, the manager of the Oaks; Mr. James, Mr. P. Hall, Mr. C. Beever (Dodsworth Silkstone), Mr. Davey (Davey Brothers), Mr. Mainwaring, and Mr. Scott, mechanical engineers, Sheffield; Mr. Taylor, Mr. Sidebottom, Mr. Barnaby, Mr. Briggs, Mr. Richards, Mr. Wilkinson, Mr. Russell, Mr. Northop, Mr. Coates, &c. About noon the fan was put in full operation, and at 20 strokes per minute it gave 77,926 cubic feet of air per minute; at 30 strokes 107,856 cubic feet per minute, and with 40 strokes there was produced 141,694 ft. Such a large amount of ventilation put the Oaks Collieries in a position second to none in South Yorkshire. The actual results of the work done will be seen from the following measurement made at the time, we believe, by Mr. P. Hall:—

	Fair running per min.	Ther.	Water-gauge—In.	Cub. ft. per min.
Strokes	20	71°	5·10	77,926
,,	30	71	9·10	107,856
,,	40	71	13·10	140,694

Even the amount of ventilation at 40 strokes it was found could be largely increased. The practical men who witnessed the work done considered that the fan was superior to the furnace, and would ultimately positively supersede it. In the evening the inauguration of the fan was celebrated by a dinner at the Royal Hotel, Barnsley, to which a large party sat down. The dinner included everything in season, and was well served, whilst the wines were all that could be desired. The chair was taken by Mr. J. Wilson, the manager of the Oaks Colliery, and the vice-chair by Mr. James, the commercial manager.

After the usual loyal toasts had been given, the Chairman proposed "Prosperity to the firm of Charles Cammell and Co." He said that during the time the Oaks Colliery had been in the hands of the company no body of men could have been better treated than the employees of that place. The directors were evidently desirous of doing everything that was fair and honourable between them and the workmen, whilst at the same time they were determined to do all they could, regardless of expense, to ensure the safety of all persons connected with their pits. With the toast he would couple the name of Mr. James, their commercial manager.

Mr. JAMES said he had been connected with the company for 13 years, and his experience was that there could not be better employers than Cammell and Co. The desire of the company was to see their workpeople well off, happy and contented. For himself, in his own position, he had ever done all he could to promote the same objects. In concluding, Mr. James proposed the health of Mr. James Wilson, the indefatigable manager of the collieries. In all transactions that had taken place between them he always found him (Mr. Wilson) a gentleman, whilst as to his practical knowledge they all knew more about it than he did. He hoped that the kindly relations which had so far existed between the workmen and officials would continue, and of which he had very little doubt. (Cheers.)

Mr. WILSON said it had ever been his desire whilst in the district to aid the men in every way, and if he had left anything undone it was because he was not aware of it. On the occasion of the last explosion at the Oaks he went there as soon as he heard of the explosion, and was cautioned not to go down, because some of the strands of the rope had giver way. His reply was that there were men below, so that it was his duty to go down. So it was at Rawmarsh, for he went to that place when he was made acquainted with the accident. He went there and did all he could towards rescuing the men and recovering the bodies, and in so doing he was seconded by the workmen. He could say that the miners as a body were the most fearless men that could be found, for they were ever ready to face any and every danger, and so it was with respect to colliery viewers. He hoped he should never be called in to any similar catastrope to those he had alluded to. As manager of the Oaks he always wished to do his duty to his employers and to the workmen, and if he lacked in anything it was because he was not aware of it. He thought they ought to be thankful for the very kind manner in which the company had always treated all the persons connected with the collieries.

The CHAIRMAN then proposed the health of the consulting engineer, coupling with the toast the name of Mr. White.

Mr. WHITE, in acknowledging the compliment, said he had great pleasure in being present on the occasion of so important a change taking place at the Oaks Colliery, and thanked the company most heartily on behalf of himself and his partner for the kind manner in which the toast had been received.

Mr. JAMES proposed the health of the underground officials, who he said were ever to be found at their post, either of duty or danger, and who, so far as those at the Oaks were concerned, he believed could not be excelled for all the necessary qualities for the positions they occupied.

Mr. PETER HALL thanked the company for the very kind manner in which the toast had been received. During the time he had been connected with the company everything had worked most harmoniously. It had been their duty to see that strict attention was paid to all orders given, and to enforce the strictest discipline, and that was the secret of their success. He looked forward to their future being as successful as the past, and he had no doubt it would be so.

Mr. BRIGGS also spoke to the toast, remarking that since the colliery was taken to by the present company everything had gone on most satisfactorily.

Mr. BARNABY also acknowledged the compliment paid to the underground officials, remarking that everything had worked well under the management of Mr. Wilson.

The CHAIRMAN then gave the "Officials in the Commercial Department of the Oaks Colliery," remarking that the preliminary steps in all mining ventures was the getting a good staff of officials at the surface. He could say that so far as the Oaks Colliery was concerned the official department was in a high state of efficiency. The men engaged in that department had great confidence placed in them, and those at the Oaks could not be excelled for ability or intelligence.

Mr. NORTHOP spoke to the toast, and said that there was a certain boundary line laid down, and if anything went wrong beyond that they had to report themselves to head quarters. Good discipline was essential in every business, but in none more so than in colliery work, and he believed at no place was discipline more strick than at the Oaks Colliery, and he was proud to say that it was so, for

he believed that very many serious accidents had taken place for the want of it. He believed that the new fan would not only make the pit safe for the men to work in, but be more advantageous to the owners than the old system.

Mr. COATES also acknowledged the toast, and in doing so alluded to the strike which had lasted in the district for some seven or eight weeks. They all knew that strikes caused trade to leave the places where they took place, and that it was a long time before it could be recovered. The strike of the miners had been most ruinous to the men themselves, to Barnsley, and also to the masters, and he hoped that it was now ended.

Mr. HALL then gave "The Engineers," coupling with the toast the names of Messrs. Davy, Mainwaring, and Scott. He believed that such gatherings did a great deal of good, as they led to the interchange of ideas, and brought all the officials together. He thought that the work done by the fan that day had been most satisfactory, and that it would be found most valuable in the future.

The CHAIRMAN said the fan has certainly worked very well. When colliery operations were first commenced they had what was termed natural ventilation, the air being renewed by the property of diffusion. Here a chimney was placed over the shaft, which caused a temporary draught, after which they had a furnace-pan at the bottom of the shaft, which set fire to some of the material below. After that came the furnace, which created a vacuum, causing the air to be sent through the workings after filling it up. In 1852 the steam-jet was introduced, and he believed if that system of ventilation had been carried out to its full extent it would have been the best thing they could have had. But the steam jet, in his opinion, had failed from a want of perseverance. He did not believe that any fan could produce the same quantity of air as the furnace could, but the fan was safer, for if an outburst of gas took place it would not be affected by it.

Mr. MAINWARING returned thanks for the hearty manner in which the toast had been received, and remarked that the work done by the fan had been good, and he had not the slightest doubt but that it would fully realise the most sanguine expectations with respect to it.

Mr. SCOTT also expressed a similar opinion, contending that the fan would be found to be the most powerful in the district.

Mr. BARNABY then gave the "visiting friends," including with the toast the names of Mr. Beever, Mr. Wilkinson, and Mr. Richards.

Mr. C. BEEVER said he thanked the company for the kind manner in which the toast had been received. With regard to ventilation by the fan, he believed it was far safer than by the furnace, and he spoke from several years' experience, for there had been a fan at his own place for some time. The fan had in all probability not reached a state of perfection, but it did everything necessary for the ventilation of a colliery, and rendered unnecessary the putting of a fire into the bottom, and he might say that such gatherings as the present were calculated to do a great deal of good, seeing that they brought out the experience of many with respect to the ventilation of mines.

Mr. WILKINSON also spoke in reply to the toast, and proposed the health of Mr. R. Micklethwaite, one of the lessors of the coal being worked by the Messrs. Cammell, which was warmly received.

Mr. SWINBURNE (Darfield Main) also spoke in response to the toast, and said the fan appeared to him to be far preferable to the furnace. By the furnace they might get more ventilation, but not so much safety as by the fan, therefore he was decidedly in favour of mechanical ventilation. At Darfield, owing to the furnace, the owners had sustained a loss of something like 100,000*l.*, which they would have saved had they expended 3000*l.* in a fan.

Mr. RICHARDS then gave "The Press," coupling with the toast the name of Mr. J. Ruglen.

Mr. RUGLEN, in responding, said the press was ever desirous of making known any invention that was calculated to save life, and he hoped that the system of ventilation by the fan now being so extensively carried out in South Yorkshire would be the means of preventing a recurrence of those terrible explosions which had obtained for the district such an unenviable notoriety.

Some other toasts followed, and the party broke up at a rather late hour.

MINING AND STOCK EXCHANGE NEWS OF THE WEEK.

Messrs. F. W. MANSELL and Co. (Sworn Stock and Share Brokers), Pinner's Hall, Old Broad-street, write to us as follows:—

I.X.L. (Gold and Silver)—COMSTOCK MINES (No. IX.)—Those who have perused our remarks upon the many mineralogical and physical advantages of the district in which the I.X.L. and Exchequer Mines are situated will not be surprised to learn from the latest advices that since the first settlement of the county there never has been that healthy activity in mining interest as now daily witnessed in the several districts of Alpine. After years of neglect by the capitalists of the State, for which, in a great measure, the early locators of mines are responsible, they fearing that the Sacramentans and San Franciscans would "cinch" them too strongly, a reaction has occurred at the Bay City, and the mines of Alpine county are now attracting the attention they should have received years ago. This better state of feeling towards the mines is the result of a radical change in the system of mining—the inauguration of shaft sinking instead of the tunnelling process, so long the drawback of this county. Mr. Chalmers was the first to change the programme that had become second nature to the people, and what is the result? As soon as the iron horse and the screw propeller can do their work the London shareholders will have placed before them "silver bricks," the best evidence they can ask for as to the value of their Alpine possessions. The fine developments made in the Exchequer shaft have spurred on others, and the future of Alpine is assured—it is as clear as the noon-day sun that its treasure crop will not be second to the great Comstock itself. As an evidence of the increased interest in the mines, we may state that one year ago the Exchequer was the only claim being worked; but now there are the Advance, with a large three compartment shaft down 200 ft.; the Flint, with a shaft down some 50 ft.; the Illinois-California, running a tunnel, now in over 1200 ft., with good prospects; and heavy machinery is to be put on the Silver Cloud as soon as the roads will permit; and a new set of hoisting works, with powerful machinery, will immediately be put on the Advance; and also on the Flint. It is said that the Lady Franklin and the Isabelle will shortly be started up, and work will soon be inaugurated on the Marion, lately purchased by San Francisco parties. Negociations are pending for a change in the ownership of two other permanent mines. Now is the golden opportunity for capitalists wishing to invest in mines to suit themselves on good terms, for in another year the value of mining property must naturally increase as kindred properties become developed. What with the work already laid out and in contemplation, and that which will follow in the wake of such enterprises, the present summer will be the most prosperous season Alpine has known.

EXCHEQUER (Gold and Silver)—No. IX.—In the absence of any further special information this week, it may not be without interest to mention a few facts as showing how rapidly wealth is sometimes realised by the development of silver mines. Not long ago a banker of San Francisco committed suicide while temporarily insane, owing to heavy losses, who but a year before was estimated to be worth 1,000,000*l.* per annum, realised from Nevada and California mines. His ruin was chiefly brought about by the operations of the "Frisco" house of Flood and O'Brien; it was a duel to the death between rival millionaires, and for a time no one could tell which way victory would go. At last the firm in question contrived to get information concerning the big bonanza in the Consolidated Virginia Mines (which we have fully explained upon previous occasions). This wonderful mine was believed to contain gold and silver to the value of no less than 60,000,000*l.*, and down to zero went the fortunes of the rival speculator. This mine now returns half a million sterling per month to its fortunate proprietors, who accordingly control the entire money market of the Pacific Coast. What the realised wealth of the four present members of the firm of Flood and O'Brien may be no one knows, but it is an established fact that the quartet had not a farthing among them when they first settled in California a few years ago. Silver mining has created several other millionaires besides the foregoing—at the head of these stands Senator Sharon, who is estimated to be worth 8,000,000*l.*, while a Mr. Jones, of Nevada, has managed to accumulate now the sum of 6,000,000*l.* In all probability these riches form only the foundation of still vaster fortunes, many indications tending to prove that mines in this district become richer the deeper the explorations are carried. The Great Comstock lode a few years ago was considered by some authorities to be practically exhausted, shafts having been sunk to nearly the greatest workable depth; so did not think the manager, however. Mr. Carlisle set to work driving a tunnel two miles long into the mountain so as to cut the lode at a much lower level than could be reached from the surface. Many regarded the experiment as extremely hazardous, but the manager's confidence has been fully justified by results, the Comstock now yielding somewhere about three quarters of a million sterling per month, and there are several other mines producing ore to the value of 500,000*l.* and 100,000*l.* per month. Most of these are in the hands of local companies, so that their enormous profits are a good deal divided. It is a curious fact, well worth the attention of English investors in American silver mines, that no want of capital has ever been experienced in California in working really substantial properties, and the chances appear imminent that English investors are now about to participate in the magnificent profits of silver mines.

STOCK EXCHANGE GENERAL MARKETS.—Throughout the week business has been confined within narrow limits, Monday having been a closed day, and the attendance of dealers scant for the remainder of the week. During such a period there is always an indisposition to embark in speculative transactions, but in addition to this there have been various political rumours in circulation tending to restrict rather than otherwise the normal stagnation, and business seems likely for some time to be restricted to a limited scale.

RAILWAYS.—The considerable depression that has taken place in the quotations of our principal railways has been attributed to various causes, but the chief one seems not to have had its full weight in the consideration—the large expenditure of new capital involved in the making of new lines and other similar works. Two of the chief railways—the London and North-Western and North-Eastern—have expended on working stock something like 16,000,000*l.* sterling; and upon seven lines representative of the varied railways, there was expended a sum approaching 1,000,000*l.* during the past six months, but in nearly every case the total expenditure for working stock was less than for the corresponding half of the preceding year. In the future this expenditure will go on, varying as new lines approach completion and the equipment needs provision, but on lines such as the Great Northern, where there are few new branches in construction, except those which will be speedily completed, there will be a decreasing amount. But where there are, as in the case of many of the lines, extensive branches for which powers have been obtained, although little or no progress has been made, the amount must in the immediate future be determined by the rate at which these works are proceeded with. But on these the expenditure has been largely for wagons to meet the increased mineral traffic, and only in small proportion for carriages, and from the dulness which has supervened in this particular branch of traffic it will, probably, be found that the whole of the estimated expenditure will not at the end of the half-year have been incurred, so that in all probability the sums to be expended to fully equip the lines in course of construction will be spread more equally over the period that construction involves, and thus the strain of an excessive issue of new capital may be avoided in part, at any rate during the deepest depths of trade depression. We confess to a belief that before the end of the present year a recovery will set in, unless untoward political events intervene; for to a large extent new branches will be opened before the year is out, making capital long locked up remunerative, and developing new sources of traffic, contributing a considerable quota to the returns. As the expenditure for rolling-stock is the inevitable preliminary to the making of capital remunerative, the largeness of the sums spent during the last year, and now being expended, are in themselves hopeful auguries of the largeness of the expectations to be formed of the revenue to be thus earned.

FOREIGN BONDS.—Russian stocks have been largely sold, resulting in a corresponding decline, some importance clearly being attached to the statement that hitherto the quotations have been supported by the continuous purchases on the part of agents employed by the Russian Government. Hitherto financial soundness was held to be the prominent element guarding the investing value of these stocks; but now, as unhappily in too many other cases, this appears to be gradually crumbling away.

MISCELLANEOUS.—The most notable feature here has been some slight recovery in a few of the Erie issues, in response to better quotations from New York.

*** A visit to the Yorkshire lead mines, and attending the West Pateley Bridge Lead Mines (statutory) meeting, must be accepted as our apology if usual correspondence has in any way been neglected.

GORSEDDA JUNCTION AND PORTMADOC RAILWAY, CARNARVONSHIRE.

THE EREINIOG PEAT FUEL AND FIRE-BRICK WORKS.

Some time since we gave our readers an account of the opening of the above-named 2-ft. gauge line of railway, which runs from Portmadoc up to the head of the Pennant Valley, Carnarvonshire. Situated at Ereiniog, about five miles from Portmadoc, adjoining the Gorsedda Junction and Portmadoc Railway, are the Ereiniog Peat and Fire-Brick Works. The very remarkable peat deposit on which these works are situated extends over about 550 acres, and was taken on a long lease some time since from J. R. Ormsby Gore, Esq., M.P., who has lately been created a peer under the title of Lord Harlech. It is claimed by those who are working this property that the operations at Ereiniog have solved the great peat question.

The non-success of all the attempts hitherto made to deal with peat commercially has been owing mainly to the fact that nearly all the deposits yet opened upon have been mere mosses. At all the peat-works hitherto established the material, being mossy peat, has to pass through the process of pulping and disintegrating before it can be dried and rendered fit for use. The expense of machinery for this purpose, as well as the cost of working it, have hitherto caused the failure of all attempts to utilise the peat to a profit. In the Ereiniog beds, however, the material has been prepared by Nature for immediate use, and the peat is many centuries, if not thousands of years, older than most known deposits; it is consequently more matured, and may be described as a bed of incipient coal lying on the surface of the earth.

The Ereiniog deposit is, moreover, so situated that it can be thoroughly drained, and this has, in fact, been accomplished by the construction of a deep adit, the bog being cross-cut in all directions so as to bring the drainage into this level, and what a short time since was a mere swamp is now solid peat ground. The peat is cut from the bed by long tools called slanes, and is then divided into lengths of 9 inches, and put to dry on the ground without any artificial heat; so great is the coherent power of the peat that immediately it is cut it may be placed on end. The peat dries in about 14 days in the summer half of the year, and becomes black and solid like coal, being then immediately fit for use. It is believed that a simple plan of drying the peat in a long shed-like stove will enable the process of drying to be carried on continuously throughout the year.

The peat deposits in the neighbourhood have for a long time been locally appreciated, but only to a small extent utilised. Of late years the landlords in the district have forbidden the cutting of peat, except for their tenants' own use. Possibly they may have become aware of the greatly increasing prospective value of peat in a district so removed from a coal supply. The Ereiniog peat deposit is practically inexhaustible; its thickness in some places is over 20 ft. and over the whole area of 550 acres it has an average depth of 12 ft. The supply will be limited solely by the demand, it being simply a question of labour. The district commanded by the undertaking is large, and the population considerable.

The fire-clay deposit lies immediately under the peat over a continuous area of 140 acres. It has been tested by borings in 18 places in this area, and is found to vary from 6 to 8 ft. in depth. The clay has been subjected to a heat of 10,000° without yielding. As the present selling price of the nearest bricks to the Portmadoc district (those from Ruabon) is about 100*s.* per 1000, and from 60*s.* to 65*s.* for common bricks, it is believed that by the opening up of the Ereiniog clay bed the whole surrounding neighbourhood will derive much benefit, as although stone is in many parts of the district abundant, bricks are in many respects preferable, especially in cases where time is an object in building. Two analyses of the clay recently made gave 61·35 and 65·60 of silica respectively. We hope shortly to give some description of the other properties adjacent to the route of the above new line of railway.

UTILISING THE WASTE HEAT OF STEAM BOILERS.—The improved apparatus invented by Mr. JAMES WILSON, of Ossett, near Wakefield, is constructed with a capacious water space, into which project recesses of a height equal to that of the boiler flues, and of a width exceeding the height thereof. Through these recesses are passed tubes arranged in a vertical direction. The recesses are surrounded on all sides but the front with water space, and the tubes serve to effect a circulation of the water. The said apparatus is set close against the rear end of the boiler flues in such a manner that the products of combustion pass therefrom into and around the said recesses, and return therefrom to and along exterior side flues formed along or around the boiler.

THE IRON INDUSTRIES OF GLOUCESTERSHIRE, FOREST OF DEAN.

By RICHARD MEADE, Assistant Keeper of Mining Records, Museum of Practical Geology.

[*Continued from page 608.*]

IRON ORE USED IN MANUFACTURE OF PIG-IRON.—In a previous notice, when considering the distribution of the hematite ores, the produce of the Forest of Dean, the quantities retained in the district for consumption in the ironworks was distinguished from that sent to South Wales, Staffordshire, and other places. Now, it will be convenient to refer in detail to these totals, showing the quantities of ore retained for reduction by the several ironworks; these details will be seen in the annexed abstract:—

Forest of Dean hematite consumed in furnaces.

Year.	Cinderford.	Parkend.	Soudley.	Total.
1856 .....Tons	28,000	29,818	—	57,818
1857	29,000	27,732	—	56,732
1858	46,000	10,712	—	56,712
1859	44,000	17,655	1,800	63,455
1860	43,700	16,796	7,500	67,996
1861	42,300	19,640	528	62,468
1862	64,625	17,100	17,870	99,595
1865	—	—	—	87,110
1867	61,311	30,000	10,000	101,311
1869	54,793	38,508	11,500	104,801
1871	60,000	32,725	20,600	133,325
1872	51,748	44,137	23,600	119,485
1873	—	—	—	74,019
1874	—	—	—	92,150

The quantities of ore above quoted refer alone to the hematite ores of the Forest; of the other ores brought into the district and used in admixture with the Forest ores there is no account. The quantity thus received is not considerable, and in addition to this a small proportion, it is understood, of mill furnace cinder is employed in pig-iron manufacture. It is variously stated that from 55 to 60 cwts. of raw ore of all kinds, including a small percentage of mill furnace cinder, is the average quantity required to make a ton of pig-iron; the percentage of iron contained in the ores varying, those raised in the north-west of the Forest yielding from 35 per cent., while the ores on the eastern side yield as much as 63 per cent. of metallic iron. In the preparation of these ores before smelting it is usual to subject them to the process of roasting or calcination, by which the metal is concentrated into a smaller weight by the removal of water, carbonic acid, &c. In the higher class of ores of the Forest the iron is concentrated by calcination to the extent of from 10 to 12 per cent., the fragments being rendered more porous and susceptible of being more readily changed in the subsequent operations of smelting in the furnace.

It may be interesting to many to note the distribution of the Forest ore, showing the quantities sent from the eastern and western side in each of the following years in the Forest of Dean:—

Years.	Eastern side.	Western side.	Total raised.
1856 .....Tons	55,450	53,818	109,268
1857	55,475	71,079	127,554
1858	71,098	36,554	107,652
1859	62,557	43,735	106,292
1861	64,758	35,661	100,419
1862	98,431	60,477	158,908
1865	33,822	108,985	142,807
1867	32,231	123,838	156,069
1869	34,447	100,148	134,595

In the above returns for the year 1865 and subsequent years the ore consumed in the Cinderford and other furnaces is included in the western side, while in years previous to 1865 the ore used in the furnaces is included in the quantities distributed on the eastern side of the Forest. Since the year 1869 the distribution of the Forest ore is recorded in a different form, which may be seen in a previous notice in this Journal, dated April 1.

The spathose ore deposits of the Brendon Hills is, as previously stated, worked by the Ebbw Vale Iron Company, the ore being conveyed to the works of the same name in Monmouthshire. This ore when calcined loses in weight to the extent of 34·29 per cent., the average amount of metallic iron in the raw ore averaging 34 to 35 per cent., which by calcination is increased to 51 per cent., in which form it is more valuable as a burthen, 1 ton of pig iron produced from the ore in this form requiring 1·95 tons of calcined ore, equivalent to raw ore of 2·89 tons. Mr. John Spiller, who has carefully examined these ores, gives the following elementary analysis of the ore after calcination, including the insoluble residue:—

Metallic iron	50·9971	Combined with oxygen ...	21·8839
,, manganese.	14·9130	,, ,, ...	6·1840
,, calcium ...	0·3044	,, ,, ...	0·1322
,, magnesium.	3·3150	,, ,, ...	2·2100
,, silica	0·0509	,, ,, ...	0·0549
,, aluminium.	0·0079	,, ,, ...	0·0 69
Oxygen	30·7339	,, ,, ...	30·7339
Total	100·3222		

The ore thus calcined is sufficiently rich in manganese to yield a spiegeleisen containing 20 per cent. of that metal if it could be successfully reduced and alloyed with the iron in the blast furnace.

COAL USED IN PIG-IRON MANUFACTURE, MILL AND FORGES, AND TIN-PLATE WORKS.—In the Agricultural Survey of Scotland, published in the beginning of the present century, will be found some facts bearing on the consumption of fuel in the manufacture of pig-iron. It is recorded of the Muirkirk Ironworks about the years 1787 and 1790 that 9 tons of coal was required in the manufacture of a ton of pig-iron; some year later before the adoption of raw coal and the hot-blast, the quantity did not exceed from 7½ to 8 tons of coal, calcining and engines included, while at the present time with calcined ores of from 50 to 60 per cent. it does not exceed 55 cwts. of coal to each ton of pig-iron made. In the Middlesborough district, where gases from the blast-furnaces are well utilised, the average consumption of fuel used in each ton of pig-iron made, treating calcined ores of 40 per cent., does not exceed from 46 to 50 cwts.

In Wales, in the year 1830, the average consumption of coal per ton of pig-iron was 4 tons; at the present time in the works utilising the gases the quantity varies from 47 to 50 cwts., advancing to the year 1840, when Mr. William Jessop, of the Butterley Ironworks, in Derbyshire, made a careful investigation into this subject, extended his enquiries to the ironworks of Great Britain; it was ascertained that 3½ tons of coal was the average quantity used, while in the works of the Forest of Dean it was found to be 3 tons 7 cwts. Again, in the year 1869, the Royal Coal Commission ascertained the average quantity of coal used in the work so f the kingdom to amount to 60 cwts. to each ton of crude metal made.

In recent years the enquiries of the Mining Record Office have been extended in this direction. The actual quantities of coal employed in the manufacture of pig-iron in Gloucestershire in each year since 1872 being as follows:—

Years.	Pig Iron.	Coal used.
1872 .....Tons	46,226	Tons 125,461
1873	44,049	134,019
1874	43,139	157,413

The coal used in 1873 and 1874 appears to be somewhat in excess of the average, and is probably inclusive of the coal used in the mills and forges of the district, and also that employed in the tin-plate works, the quantity thus consumed not being less than from 20,000 to 22,500 tons per annum when actively employed.

In conclusion, it may be said of the coal worked in the Forest that the Coleford High Delf, an important seam, is favourably regarded as a serviceable coal, and is in much request for domestic purposes, the small being used for engine purposes, raising steam, &c.

The following analysis show the chemical-constituents of the Coleford High Delf that side by side shows the character of the Trenchard seam:—

	Coleford High Delf.	Trenchard Coal.
Carbon.....	78·810	80·709
Hydrogen	5·303	5·425
Oxygen	9·05	7·060
Nitrogen	1·75	·735
Sulphur	2·062	1·271
Ash	3·020	4·800
Total...	100·000	100 000

The heating power of the Coleford High Delf coal is equivalent to

12·7, or 1 lb. of this coal will, by perfect combustion, convert 12·7 lbs. of boiling water into steam.

[Replying to enquiries on the subject of our next notice, it will be convenient to say that the districts to be considered will include those of Wiltshire, Hampshire, Oxfordshire, and Buckinghamshire.]

Registration of New Companies.

The following joint-stock companies have been duly registered:—

SKERNE IRON BRIDGEWORK COMPANY (Limited).—Capital 50,000*l.*, in 50*l.* shares. To take over the Bridgework branch of the business of the Skerne Ironworkers' Company (Limited). The subscribers (who take one share each) are—Edward Hutchinson, Haslemere, engineer; F. W. Backhouse, 11, Old Broad-street, stockbroker; F. Grey, Ludgrave, New Barnet: W. Fossick, 86, Cannon-street, engineer; E. Lucas, Wyndham-road, Camberwell, brewer; Alfred Wadham, 5, Langdale terrace, Stockton; J. B. Hutchinson, The Park, Nottingham. The directors are not yet appointed, but they are to be not less than three or more than eight. The qualification is to be 10 shares.

BLACKWELL PARK RED HEMATITE IRON AND COAL MINING COMPANY, CARLISLE (Limited).—Capital 2500*l.*, in 10*l.* shares. To adopt and carry out a contract made between Christopher Armstrong, of Woodstock-road, Finsbury Park, and E. W. Glover, of Belvedere, on behalf of the company, for the purchase of certain mineral property at Blackwell Park, belonging to James Atkinson, of Carlisle. The subscribers (who take one share each) are—Thomas Griffiths, Oxton, Birkenhead, merchant; E. Cockburn, Park Ravine, white lead manufacturer; C. Armstrong, 12, Woodstock-road, Finsbury Park; C. F. Snee, 4, Hazelville road, Hornsey, clerk; G. H. Snee, 55, Benwell road, Holloway, clerk; C. F. Clements, 26, Birchin lane, stockbroker; A. Thornton, 26, Birchin lane, stockbroker.

MIDLAND IMPROVED INDUSTRIAL DWELLING ASSOCIATION (Limited.)—Capital 100,000*l.*, in 5*l.* shares. To erect improved dwellings in the Midland counties. The subscribers (who take 10 shares each) are—F. N. Smith, Winfield Park, Derby; S. W. Cox, Spondon, near Derby; J. Binley, Templetown, Derby; W. H. Bemrose, Lonsdale place, Derby; Richard Allen, The Park, Nottingham; W. Clark, The Park, Nottingham; W. Sulley, Balmoral-road, Nottingham.

NATIONAL FARM LABOURERS' UNION CO-OPERATIVE LAND COMPANY (Limited).—Capital 25,000*l.*, in shares of 2*l.* 10*s.* each. To carry on co-operative farming in connection with the National Farm Labourers' Union. The subscribers (who take one share each) are—J. F. Murray, 61, Tyneson road; J. W. Lake, Leamington; W. Hicks, Thornton; J. Haynes, Warrington; T. Jones, Warrington; J. Knight, Compton; J. C. M. Vincent, Leamington.

LIVERPOOL AND ST. HELENS LIGHTERAGE COMPANY (Limited.)—Capital 20,000*l.*, in 10*l.* shares. The conveyance of goods between St. Helens, Widness, and Liverpool is intended by this company. The subscribers are—S. Hough, Grecian House, Liverpool, 100; John Warrington, Cheddleton House, Belvedere-road, Liverpool, 100; David Gamble, Windlehurst, St. Helens, 90; Alfred Dean, Cowley Hill-lane, St. Helens, 10; W. J. Menzies, Stretton Hall, Malpas, 25; S. Menzies, Eccleston Hall, Prescott, 25; J. McBryde, St. Helens, 2 0.

GUNPOWDER PILE DRIVING COMPANY (Limited).—Capital 30,000*l.*, in 10*l.* shares. To build and construct gunpowder pile driving machines according to a patent of Mr. Philip S. Justice. The subscribers (who take one share each) are—P. S. Justice, 27, Southampton Buildings; A. Mason, 1, Craven-street, Strand; Richard Hiliers, 15, Great Tower-street; C. Jacob, 13, Cullum-street; Charles Goolden, Westminster Chambers, S.W.; Albert Schneider, 29, Mincing-lane; C. C. Bernard, 16, Duke-street, Portland-street.

PATENT ÆRATOR COMPANY (Limited).—Capital 30,000*l.*, in 5*l.* shares. To acquire patents for the manufacture of aërated liquids, &c. The subscribers (who take one share each) are—F. H. Fearn, Valentine Cottage, Peckham Rye; H. Carton, 12, Alexandra-terrace, Catford Bridge; J. Jennings, 4, Belvoir Villa, Tufnell Park, W.; J. Mingay, 16, Seymour street, Connaught square; R. W. Williment, 22, Berwick-street, Soho; J. S. Cooper, 39, Parnell-road, Bow; J. Varley, 16, Anstey-road, Peckham Rye.

SLAITHWAITE LAND AND BUILDING COMPANY (Limited).—Capital 20,000*l.*, in 1*l.* shares. To acquire property for building purposes at Slaithwaite, near Huddersfield. The subscribers (who take one share each) are—Geo. Haigh, Golcar, near Huddersfield; H. Crowther, Golcar; J. Crowther, Ollwell House, Marsden; H. Walker, Slaithwaite; J. Brierley, Slaithwaite; D. Eagland, Slaithwaith; J. Sizden, Slaithwaite.

TEES NUT AND BOLT COMPANY (Limited).—Capital 10,000*l.*, in 25*l.* shares. To carry on business as ironfounders, smiths, &c. The subscribers are—Charles Banks, Middlesborough, 6; H. Blackhurst, 24, Alfred street, Middlesborough, 12; W. Rudge, Stockton-on-Tees, 12; J. Perk, Stockton-on-Tees, 12; W. Dobson, 1, Wellington street, Stockton, 12; Thomas Williams, Stockton, 12; W. J. Wade, Stockton.

HAMMERSMITH TOWN HALL COMPANY (Limited).—Capital 16,000*l.*, in 5*l.* shares. To erect a town hall and market-place at Hammersmith.

THE WEEK.

SATURDAY, JUNE 3.—Very little business was done in the face of the approaching holidays, but the tone was good. A few purchases for investment was reported' while many dealers, with their usual indisposition to leave the City with an open account, bought to close a fall. In Railways, Brighton A were chiefly in demand, in expectation of good traffic returns, and closed 95¼ to 96—a rise of 1/. A similar advance took place in Sheffield, while Birmingham, Berwick, and British rose ¾. In Mines the principal feature was an improvement of 10*s.* in Richmond, to 8¾; of late these shares have steadily advanced, and been remarkably firm. One of the dealers, who for years back has been a heavy "bear," found himself to day involved, and the forcible closing of his account led to the rise. Parys Mountain, 18*s.* to 20*s.*: Van Consols, 1⅞ to 2⅛; Pateley Bridge, 3¾ to 4. Egyptians were steady, and both the Peruvian issues improved ⅞ per cent.

TUESDAY.—The markets all showed weakness at the opening, and beyond a temporary rally in the middle of the day continued and closed flat, the Eastern Question being considered as far off from being settled as ever. A semi-panic prevailed in Argentine stocks, the 1868 loan falling 7 per cent., to 53⅛, 44½, while the 1871 loan declined 5. Buenos Ayres of 1873 fell 3½ per cent. Most Russian issues showed extreme heaviness, more particularly the so called Railway Bonds, some of which fell 2 and 3 per cent. In Railways, Brighton A receded 1½ per cent., notwithstanding the traffic return showed an increase of over 15,000*l.* Dover A had an increase of 1535*l.*, and declined ⅞ per cent. Metropolitan, District, and Chatham and Dover showed firmness, and are probably now about the safest stocks to buy, if it is advisable at the present time to purchase any railway stock. Ottomans were 4½ to 4⅝; Turks, 13¾ to 14; and Hudson Bay, 17⅝ to 17¾. A fair business was done in mines, Richmond rose ⅜, and Pennerley ¼. Cedar Creek, 10*s.* to 15. Sweetland Creek, 1 to 1¼, and depressed, owing to the report. Alamillos, 2⅛ to 2⅜. Don Pedros were dealt in at 3*s.* 9*d.* Aberdaunant, 12*s.* 6*d.* to 15*s.*; West Tankerville, 1⅞ to 2⅛; Frontino, 2 to 2¼.

WEDNESDAY.—The variations in railways were extremely insignificant, but a further severe fall took place in Russian bonds, on sales (or said to be) from an influential quarter. Fears are beginning to be felt that if Russia is left to herself she cannot much longer pay the interest on her gigantic debt. The fall ranged from 1 to 5 per cent., the railways, as usual, suffering the most. The Five per Cents. (1871) were dealt in at 89 and 86¾. Beyond a fall of ¾ in Brighton A, and a rise of ¼ in No th British, railways underwent but little change. The Great Eastern Railway traffic shows an increase of 8013*l.*, the Great Western an increase of 14,797*l.*, the Midland an increase of 14,726*l.*, and the North-Western an increase of 10,703*l.* There was a decrease of 376*l.* in the Sheffield returns. In mines, St. John del Rey rose 20*l.*, to 360*l.*, on the notification of a 25 per cent. dividend. Eberhardt advanced 15*s.*, to 9, and Richmond left off firm. On the other hand Sweetlands were offered at ¾. Eley Brothers, 23, 24; Lion Brewery, 9, 10 prem.

THURSDAY.—Russians fell heavily, and buyers were exceedingly wary. To-day the continental bourses were also sellers, and it looked at one time as if there would be a panic; as it was, the 1870 loan receded 5 per cent., and the 1862 3 per cent. In sympathy Chilian of 1873 and 1875 declined 2¼ per cent., and Hungarian of 1874 2¼ per cent. Egyptians closed 35½ to 35⅝, and Turks 12⅞ to 13. On the other hand, Argentine 1868 improved 2½ per cent., the Messrs. Murietta having received intelligence of the next coupon and drawing being secured. Brighton A fell 1½, to 93; and Doura 2½, to 109. The other changes were of no importance. Business was done in Sweetland Creek at 15*s.*; the price seems unreasonably low; there are, it is understood, at least two dividends in hand, and a period of almost eighteen months to make arrangements for cheaper water.

FRIDAY.—Brighton, A, have been offered at 92⅛, but have recovered, and are now 93¾, buyers. Dover, A, are 109½, a sensible improvement on last night. Egyptian, after being 34½ to 35, are 35 to 35¼; Argentine, 1868, 56¼ to 57½; ditto, 1871, 41½ to 41¾; Hungarian, 1874, 75½ to 75⅝; Peruvian 5 per cent., 13⅛ to 13⅜.—*Two o'clock.*—The improvement in Brighton, A, is lost, and most of the other lines are weaker. Berwick have fallen ¼; but Dover, A, retain the morning's improvement, and Peruvian have advanced to 13⅝, 13⅞. Hungarian, 1873, 77 to 78; ditto 5 per cent., 56 to 57. Richmond have fallen to 8¾, at which price Eberhardt are also offered.—*Four o'clock.*—Egyptian show an advance to 35⅛, 35⅝. Turks, 1871, are 13⅛ to 13¼. Great Western continue dull, now 10.¼ to 102½, but have been lower. Berwick, new stock, dealt in at ⅛ prem.

THE LIGHTNING AMALGAMATOR.—This is the name of a new process for crushing and treating all kinds of ores, full up to the assay, and at equitable prices. The whole apparatus is very simple. Broken rock of about the size of a turkey egg is put into a crusher not larger than an ordinary piano, and from 10 to 25 tons is pulverised as fine as flour daily. A larger crusher, of course, performs more work. One man only is employed about the entire crushing, from the time it is dumped until required for the furnace. This consists of a cast iron column or cylinder from 18 to 20 ft. high. It is divided into three compartments equi distant from each other by valves worked with a lever. Around this upright cylinder there is built a brick inclosure, with an aperture sufficiently large to admit of a blaze from bottom to top. A charge of ore is placed in the top compartment of the cylinder, and after remaining five minutes the first valve is turned, and the charge drops in the compartment below; there it meets with a stronger heat and volatilised quicksilver. Ten minutes in this, and it is dropped in the next lower compartment, where it is subjected to a white heat, and dropped to the bottom to cool. Being thoroughly impregnated with quicksilver, it goes to the amalgamating pans, and in four hours comes out bullion. The quicksilver is supplied from a chamber at the foot of the third compartment, and opposite to the furnace which supplies the heat. By the use of the valves the quicksilver is all, or nearly all, saved. It is said that the entire outlit, with privilege to work it, will not exceed $6000. Ponderous machinery, batteries, and concomitant expensive buildings and employees are curtailed, saving almost five sixths of the present cost. The patent for this invention was issued about one year ago, but improvements have been made and defects pointed out which establish its utility beyond question. The different ores from Virginia and North Carolina mines are being tried every day with success. Ores that would only yield from $7 to $10 per ton heretofore are by this method increased to $20 and $22. It is owned by the foundrymen, Walker and Co., of Philadelphia, and was discovered by the scientific representative of that firm. The expense per ton is not expected to exceed $1.50., and they guarantee to get the full assay, and in no event to fall below 5 per cent.—*Engineering and Mining Journal* (New York).

COAL MINES REGULATION ACT, 1872.

CERTIFICATES OF COMPETENCY.

As a knowledge of the nature of the questions asked at the Examinations for Certificates of Competency is desirable to candidates, in order to enable them to avoid waste of time in studying subjects not regarded as essential, the questions set by the Board for Examinations for the North and East Lancashire District at the last three examinations are subjoined:—

INSTRUCTIONS TO CANDIDATES.

1.—During the examination the candidate must not speak to any other candidate nor hold any communication with him, nor must he leave the room until he has completed his questions, nor then without the permission of the secretary.

2.—Answers must be written on the paper supplied, and the answer must be numbered to correspond with the question. The candidate may answer any question in the order he may prefer. Answers must be written on one side of the paper only. Each sheet must be signed at the foot with the name of the candidate. The candidate is not required to answer all the questions, but he must show a competent knowledge in each subject.

3.—The paper of questions must be returned with the answers, and no candidate is allowed to take away with him a copy of the questions or any of them.

PRELIMINARY.

State your Name .....
Age .....
Address .....

QUESTIONS—JUNE, 1873.

1.—SHAFTS.

1.—Describe the operation of sinking and securing a shaft through a surface of quicksand 10 yards in depth.
2.—What description of conductors is used in shafts?
3.—What is the approximate weight of a round hempen rope, 250 yards in length, and 8 in. in circumference?
4.—By what number of short chains ought a circular cradle or flying scaffold to be attached to the bottom end of a capstan rope?
5.—Describe the process of laying a metal curb to support a column of metal tubbing.
6.—Describe the process of putting in metal tubbing.
7.—How would you send metal tubbing down a shaft?

2.—VENTILATION.

8.—What is fire-damp, and by what other names is it called?
9.—What is atmospheric air?
10.—What is carbonic acid, and by what other names is it called?
11.—What are approximately the relative weights of each, that of air being 1?
12.—When is fire damp most explosive; and, should it continue to burn in the lamp after drawing down the wick, how would you act?
13.—Describe the Stephenson, the Clanny, and the Davy lamps, and say which you consider the safest, and why.
14.—What means are in use to produce ventilation in mines?
15.—Ventilate the workings shown by the accompanying plan, without using any air-doors, except those shown; the drawing roads are distinguished by dotted lines.

3.—WORKINGS.

16.—What is meant by "long work?" Show this by a sketch.
17.—What is meant by "pillar and stall" work? Show this by a sketch.
18.—Describe the process of boring against an old working or waste, and state what precautions you would use.
19.—The roof of a roadway is very destructive of timber, and is almost impossible to support; what course would you try?
20.—In driving the west levels in a seam of coal dipping to the south at the rate of 1 in 6, an upthrow fault of 15 yards is met with; what would you do to recover the coal? If it were tunnelled out, what would be the length of the tunnel?

4.—GUNPOWDER.

21.—What is gunpowder made of?
22.—How do you make a cartridge?
23.—Describe the material you would use in tamping?
24.—What would you do in case of a missed shot?

5.—MACHINERY.

25.—What is the difference between a condensing and a non-condensing engine?
26.—What is the principle of the Cornish pumping-engine?
27.—What quantity of water is lifted per minute by a bucket-pump, the diameter of the working barrel being 14 in., the length of stroke 7 ft., and the number of strokes per minute 6½?
28.—The water in a boiler has become dangerously low; what would you do?
29.—Describe the method of applying a balance to pit ropes.

QUESTIONS—DECEMBER, 1873.

1.—Name shortly the common sources of danger to be guarded against in ordinary sinking without pumps.
2.—Describe the method of putting in a length of bricking in a sinking pit.
3.—Why does the air in the upcast shaft, heated by a furnace, rise?
4.—What different gases given off in mines are you acquainted with, and what are their peculiarities?
5.—What would be the effect of putting a light into fire-damp unmixed with air?
6.—Why, when fire-damp explodes inside a safety-lamp, does the flame not pass through the gauze?
7.—What is an air crossing, and what is its use?
8.—How many cubic feet of air per minute are there passing along an air-way 7 ft. high by 10 ft. wide, the velocity of the air current being 300 ft. per minute?
9.—Describe by a sketch the different methods of working coal with which you are acquainted, indicating the air currents.
10.—What precautions would you use in approaching workings expected to contain water or gas?
11.—Why should a place be visited as soon as possible after the firing of a shot in it?
12.—Where two mines, each having an inclination of 1 vertical for 8 horizontal, are 50 yards apart vertically, what is the shortest length of a level tunnel to connect the two?
13.—How much larger is an air-way 8 ft. by 8 ft. than one 4 ft. by 4 ft.?
14.—What is a vacuum, what pressure corresponds with it, and to what is this pressure due?
15.—What is a barometer, thermometer, anemometer, and water-gauge?
16.—How would a water-gauge be affected by contracting an air-way at a given place?

QUESTIONS—JUNE, 1874.

1.—Name the different gases given off in mines, and give their respective properties.
2.—Will fire-damp unmixed with air support combustion?
3.—What is the principle upon which a Davy lamp is constructed, and what constitutes its safety?
4.—Name the different methods of working coal. Describe them by sketches, and show how you would ventilate.
5.—What precaution is necessary where gas is given off and known to exist in a cavity above an air-way?
6.—What precaution should be observed after firing shots in working places?
7.—Show, by sketch, the method of boring you would recommend in approaching workings known to contain water or gas.
8.—In a mine with an inclination of 1 in 6 dipping to south, a fault of 8 yards up running north and south is met with in the east levels: in what direction should a level tunnel be driven to gain the coal, and what length of tunnel would it require?
9.—Describe the barometer, thermometer, anemometer, and water gauge, and their respective uses in mines.
10.—Give the method of walling a sinking pit, and state what precaution should be taken where gas is given off.
11.—What is the proportion at which air and fire-damp mixed is most explosive?
12.—Describe by a sketch a furnace, dumb drift, and air crossing.
13.—Give the contents in cubic feet of a space 10 yards long, 3 yards wide, and 2½ yards high. If this space was full of water, how long would it take a pump to empty it, delivering at the rate of 20 gallons a minute, there being 6¼ gallons in a cubic foot?
14.—If the area of an air road be 50 square feet, what velocity must be attained in the air current to produce 50,000 cubic feet per minute?
15.—Describe, by sketch or otherwise, the different kinds of pumps used in pits.
16.—What is the first general rule in the Coal Mines Regulation Act, 1872?
17.—What is the general rule in regard to the fencing of places?
18.—What is the duty of the person in charge of any part of a mine in case of danger arising from gas, and what should be done before workmen can be re-admitted according to the general rule?
19.—What does the general rule provide for as to gunpowder, viz.:—As to its storage, quantity in one place, charging of it, missed shots, and its use on finding gas in the working places.

QUESTIONS—DECEMBER, 1874.

1.—What are the restrictions as to the employment underground of boys and male young persons in the Coal Mines Regulation Act, 1862?
2.—What notices are required to be given in case of accidents, and to whom should they be sent?
3.—Which places in a mine are required to be ventilated, and to what extent?
4.—Which places should be fenced off?
5.—What is the general rule as to safety lamps and lights in places where there is likely to be an accumulation of fire damp?
6.—Where are man-holes or places of refuge required to be provided?
7.—Of what is atmospheric air, or the common air we breathe, composed, and in what proportions?
8.—What is carbonic acid or black damp?
9.—What is oxygen?
10.—What is nitrogen?
11.—By what other name is fire-damp known?
12.—State generally what you know of the above-named gases, as to where found, and their effect upon life or combustion.
13.—What are the general laws relating to the friction of air in mines?
14.—Describe by sketch any methods of getting coal with which you are acquainted, and indicate the air currents.
15.—In an up-brow where the inclination of the mine if 1 in 7, a fault of 10 yards down is met with; what is the shortest length of level tunnel necessary to gain the coal?
16.—In an airway of 5 ft. wide by 4 ft. 6 in. high the anemometer registers 550 as the velocity per minute; what is the quantity of air passing?
17.—What is a furnace, a dumb drift, and an air crossing? Show by sketch where and how each is applied.
18.—What quantity of water in gallons will a tank contain, the dimensions being 9 ft. by 8 ft. by 4 ft. 6 in., there being 6¼ gallons to a cubic foot?
19.—What is the use of a barometer about a mine?
20.—What is the water gauge used in mines, and what is its use?
21.—What is an anemometer?

WHEAL BASSET.—The great tin lode recently cut in the 70, from Dennis's, is in rising turning into copper, some splendid specimens of red oxide of copper having been taken from it. The new lode cut in the 100 has not been seen in the 75 and 60 cross cuts as yet, but they are pushing on with all speed. The future of Wheal Basset looks more cheering than for the past ten years for a great and lasting copper and tin mine.

EBERHARDT AND AURORA MINING COMPANY.

TO THE EDITOR OF THE MINING JOURNAL.

SIR,—Shareholders and readers of the *Mining Journal* of April 29, reporting the meeting of April 24, will remember that the Chairman, Mr. Ridsdale, said "So soon as we have got the mill in running order, during a month or two, and the bullion over here, then we shall be in a position to commence to disburse some of this profit which we have waited for so long." The sum of 22,000*l.* produce from May 6 to June 6 is now on its way to London, the profit on which is about 14,000*l.*, equal to a dividend of 10*s.* per share, and no doubt the profit for June will be equally large or larger. The shareholders will, therefore, do well to write to the directors reminding those gentlemen of the above promise, and that they will prefer to receive 10*s.* per share before the end of this month, and wait two months if necessary for the next 10*s.* Promises ought to be kept at last. The tunnel is commenced. Capt. Drake has started for White Pine, *via* New York, and future prospects are very cheering. South Aurora's quota to the tunnel—5000*l.*—is fully arranged for.

Pinner's-court, Old Broad street, June 9. T. G. TAYLOR.

HYDRAULIC MOTIVE POWER ENGINES.—The invention of Mr. H. HILDITCH, of Wolverhampton, consists in obtaining motive power from a descending column of water by arranging within a case a wheel similar to an ordinary water-wheel, and causing the column of water to be divided into four or other number of small columns, which are delivered at equidistant points on the wheel. At or near the points in the case where the small columns of water enter are packings for preventing the back action of the water, and also outlets for the water. The space between the wheel and case is thus kept filled with water having the pressure of the original column. Valves are used for determining the amount of water entering the engine, and these valves may be operated by a governor.

SAND BLAST.—Messrs. LE DE FONTAINEMOREAU and Co., South-street, Finsbury (for R. A. Tilghman, of Philadelphia), has patented some improvements in producing designs on hard substances by the sand blast. These improvements consist—1. In producing designs on surfaces by the sand blast by means of brittle or pulverisable paper on which the design is printed with resistant ink, and pasting the said paper on the surface, so that when subjected to the sand blast the unprotected parts of the paper will be first destroyed, and then the parts of the surface thus laid bare will be engraved by the cutting action of the sand.—2. In producing designs on surfaces by the sand blast, by first printing the design on paper from an engraved plate with an ink which is both resistant and transferable, then transferring the said ink to the surface, stripping off the paper and applying the sand blast.

IRON-STEEL.—We are most of us tolerably familiar with the comparative advantages and disadvantages of steel and iron—on the one side ductility, softness, cheapness; and on the other side hardness, elasticity, and increased cost. A discovery recently made at the Wyandotte Rolling-mill, near Detroit, leads to the hope that we may henceforth see all the good qualities of both in combination. The "Detroit Post" gives an account of rails recently made at this mill with an iron base and a Bessemer steel head, so successfully welded that the point of juncture between the two metals could in no way be discovered. One of these rails was tried against a Bessmer steel rail, both being submitted to 60 blows of a 20-ton hammer. The steel was cracked and broken in every direction, but the welded rail, though mashed down and twisted, was nowhere in the least broken. Nor, when the combined metal is broken or twisted, does the steel separate from the iron. The success of this novel combination is due to the use of a peculiar metalloid flux, composed of 55 parts iron, 20 parts silicon, and 25 parts aluminium. The process is simple. The pile is made up as for an ordinary iron rail. For the head scraps of steel are spread to the requisite thickness, and over them is laid a plate of steel. The flux is scattered through and over the pile, and the whole is then put into the oven, and when properly heated is drawn out and rolled in the usual manner, the result being the perfect union above described. With regard to the flux, the chemical function of the silicon is that of taking up all the alkaline matter, and the duty of the aluminium is to eliminate the free oxygen, phosphorus, and sulphur. We need not expatiate on the value of a discovery which enables us to combine iron and steel in one close-grained metal, even could it be applied to nothing but rails for railroads. But there is no reason for supposing that it would be confined to this single use.

LEAD ORES.

Date.	Mines.	Tons.	Price per ton.	Purchasers.
May 23	—Tan-y-Bwlch	50	£14 6 6	Burry Port Company.
27	—Willoughby	35	14 18 6	Jenkins Brothers.
29	—Lisburne—Frongoch	50	14 0 0	Panther Lead Company.
—	„ — ditto	50	13 5 0	ditto
	—Goginan	54	18 5 0	Adam Eyton.
31	—Wye Valley	40	14 6 0	Nevill, Druce, and Co.
June 1	—Kingston Consols	15	15 16 6	Treffry's Estate.
—	ditto	2	8 17 6	Nevill, Druce, and Co.
5	—Great Laxey	100	22 11 6	Adam Eyton.
8	—Talargoch:—			
	Maesyrewddu	45	14 11 6	Walker, Parker, and Co.
	Coetia Llys	45	14 15 6	Sheldon, Bush, and Co.
	—North Hendre	40	14 18 6	Adam Eyton.
	—Duchess of Westmin.	5	13 7 6	ditto
	—Ladywell	20	13 0 0	ditto
	—Old Treburgett	33	26 5 6	Weston, Son, and Co.
	—West Tankerville	25	14 13 0	Nevill, Druce, and Co.

BLENDE.

Date.	Mines	Tons.	Price per ton.	Purchasers.
June 1	—Kingston Consols	10	£ 3 1 6	Villiers Smelting Co.
—	ditto	20	4 0 6	Vivian and Son.
7	—Talargoch	100	4 15 0	Bagillt Smelting Co.
—	ditto	34	4 11 0	Vivian and Sons.
—	ditto	33	4 11 0	Dillwyn and Co.
—	ditto	33	4 11 0	Richardson and Co.

PERUVIAN TIN ORE SOLD IN LIVERPOOL on June 7.

Messrs. R. R. Michell and Co. have purchased 2 tons, at 30*l.* 2*s.* 6*d.*; ½ ton, at 24*l.* 2*s.* 6*d.*; and 4¾ tons, at 42*l.* 2*s.* 6*d.* per ton.—Total, 7¼ tons.

COPPER ORES.

Sampled May 17, and sold at Tabb's Hotel, Redruth, June 1.

Mines.	Tons.	Price.	Mines.	Tons.	Price.
West Tolgus	80	£6 15 6	West Seton	34	£5 0 6
ditto	71	6 11 0	South Crofty	65	3 5 6
ditto	70	5 7 6	ditto	61	3 8 0
ditto	64	5 15 6	Wheal Basset	47	9 0 6
ditto	49	3 17 6	ditto	36	4 4 0
Crenver and Abraham	80	2 14 0	ditto	34	7 8 0
ditto	60	2 18 6	West Basset	51	2 14 6
ditto	57	2 1 6	ditto	38	5 16 6
ditto	47	2 18 0	ditto	15	1 13 6
ditto	48	5 9 0	West Poldice	30	5 19 6
ditto	40	2 15 0	ditto	20	9 13 6
Carn Brea	55	2 2 0	Wheal Agar	36	2 1 6
ditto	49	4 9 6	ditto	4	5 2 0
ditto	44	4 0 6	South Carn Brea	24	6 18 6
ditto	5	9 5 6	North Treskerby	21	4 17 0
East Pool	58	2 10 6	Penstruthal	11	4 14 0
ditto	54	3 0 6	South Frances	6	2 18 6
ditto	38	4 3 6	East Grenville	6	0 3 0
West Seton	60	5 0 6	Pedn-an-drea	3	6 16 6
ditto	52	3 19 6			

TOTAL PRODUCE.

West Tolgus	334	£1942 15 6	We t Poldice	50	£372 15 0
Crenver and Abra.	330	1006 15 6	Wheal Agar	40	95 2 0
Carn Brea	153	558 5 0	South Carn Brea	34	235 9 0
East Pool	150	468 9 0	North Treskerby	21	101 17 0
West Seton	146	679 1 0	Penstruthal	11	51 14 0
South Crofty	126	420 5 6	South Frances	6	17 11 0
Wheal Basset	117	826 19 6	East Grenville	6	0 18 0
West Basset	104	385 9 0	Pedn-an-drea	3	20 9 6

Average standard ..... £109 8 0 | Average produce 6½
Average price per ton £4 8 0
Quantity of ore ..... 1631 | Quantity of fine copper 106 tons 13 cwts.
Amount of money £7183 15 6
LAST SALE.—Average standard ..... £109 3 0 | Average produce 6⅞
Standard of corresponding sale last month, £109 9 0—Produce, 6⅞

COMPANIES BY WHOM THE ORES WERE PURCHASED.

Names.	Tons.	Amount.
Vivian and Sons	320½	£1554 2 2
Grenfell and Son	320½	1894 4 8
Nevill, Druce, and Co.	109	360 1 0
Williams, Foster, and Co.	295	906 8 6
Mason and Elkington	259	1137 19 0
Copper Miners' Company	313	1230 1 0
Sweetland, Tuttle, and Co.	14½	98 19 2
Total	1631	£7183 15 6

Mining Correspondence.

BRITISH MINES.

ABERDAUNANT.—S. Toy, June 7: Deep Level: We have cleared all the stuff from the south cross-cut, and are now stoping the bottom of it, and blasting down the side to make it wider, which will be finished and the tramroad laid down by the end of this week.—No. 2 Adit: The ground is a little better for driving: the lode is large, and occasionally producing stones of lead.—No. 1 Adit: The ground is favourable for driving, and the men are making good progress. The lode is large and of a kindly appearance for producing mineral. The new shaft is down 7 fms. 1 ft. In the east part of the sett (Crowlwm), in driving the cross-cut towards the south lode, we have seen a little lead between the joints of the rock.

BAMPFYLDE.—J. Juleff, June 8: The stopes in the back of the 112 continue to look exceedingly well. No. 1 stope is worth 10l. per fathom, and No. 2 stope is worth 15l. per fathom. In the 112 end west the lode continues to be worth 15l. per fathom. The lode in the 102 end west is worth 5l. per fathom. I am glad to say the surface water is again increasing for driving the large pumping wheel with more speed. From the fact of the copper ore improving in quality in the bottom of the mine, I have every confidence in the future success of the property.

BEDFORD UNITED.—William Phillips, June 8: The engine shaft is being sunk rapidly, and in the course of another week we hope to make it good 12 fms. deep. The lode in the 115 east is still worth 20l. per fathom. The cross cut from the 115 west is being continued to intersect the south part of the lode. The 103 east is improved, and is looking more promising; now worth about 12l. per fathom. Driving by the side of the lode is continued in the 103 west. The stopes generally are much the same as for some time past.—South Lode: Through mistake, or misprint, our report in the Journal of last week reads contrary to what was meant. On account of the continuance of dry weather we have been enabled to resume operations on this lode; and every effort is still being made to clear the rise through the surface, which we hope to do in a very short time.

BLUE HILLS.—S. Bennetts, A. Gripe, June 3: We have cut through the lode above the gossan referred to in our last report to see how it looked just in the heave, and find it a most promising-looking lode, although not very productive, and is about 2 ft. wide. This first part of the gossan shifted the lode just across the shaft, where it is 4 ft. wide when cut off by the main part of the gossan; from the appearance of the ground in the rise (which is now 4 fms. up) the north section of the lode is near at hand.

CATHEDRAL.—J. Michell, June 5: Setting Report: The engine-shaft to sink below the 42, by six men and three boys, for 3 fms., at 31l. 10s.; the lode is worth from 10l. to 20l. per fathom. The 42 to drive east, by three men and three boys, at 5l. per fathom; lode 4 ft. wide, worth from 10l. to 12l. per fathom. The 42, to drive west of shaft, by three men and three boys, at 5l. 10s. per fathom; lode 3 ft. wide, worth about 7l. per fathom. The 30, to drive east of shaft, by four men, at 2l. 5s. per fathom; lode 2 ft. wide, composed of gossan, and letting out a quantity of water. The adit level to drive west of cross-course, on the north lode, by two men and two boys, at 5l. per fathom; lode producing gossan, spar, with stones of tin.

CWM DWYFOR.—J. Jewell, June 8: Stewart's Shaft: The lode (No. 4 south), in sinking this shaft below the 10, is nearly all the size of the shaft, and is producing saving work for lead.—Level on No. 4 Lode, South: The lode in this level, driving east of Stewart's shaft, is 2 ft. wide, and is presenting a better appearance. I hope by the end of this month we shall meet with the large slide seen at surface, at the eastern end of the open cut on this lode.—Level on No. 3 Lode, South: The men are still desuing the lode in this level, driving east of the south cross-cut. We shall take down the lode next week; when last taken down it yielded fully 10 cwts. of silver-lead ore per fathom. We are getting ready another parcel of lead ore for the market.

CWMYSTWITH.—June 6: The lode in Michell's level west is still 4 ft. wide; worth 12 cwts. of lead ore per fathom; a nice, kindly lode. The rise in the back of Michell's level and the winze in the bottom of the Rosa level, both on the new lode, are still poor. In Gill's upper level cross-cut north the ground is hard for driving. Our stopes and tribute pitches are looking just as usual. We are making fair progress with our surface work, and shall be ready for the machinery soon.

DE BROKE.—J. Phillips, June 8: In Wilson's shaft the ground is rather more spare for sinking, being partly on the branches of spar and compact killas forming the south part of the lode. The 25 east is not so productive, the lode being disordered by a clay joint; present value 10l. per fathom. The stope east of the rise is worth 30l. per fathom. In the stope west of the junction a level has been extended east to the caunter lode in ore ground worth 14l. per fathom. The stope is of the same value. I intend to sample 12 tons of lead ore next Saturday.

DEVON GREAT CONSOLS.—June 9: Wheal Josiah: Richards's engine-shaft is in regular course of sinking below the 160, and fair progress continues to be made.—Richards's Engine Shaft: In the 60 west, and west of Castle's cross-cut on south part of lode, the lode is worth 3 tons of ore or 12l. per fathom, and in same level, east of Castle's cross cut, on south part of lode, the lode is worth 2 tons of ore or 8l. per fathom.—Wheal Emma: Thomas's Engine-Shaft: In the 216 east the ground by the side of the lode, where we are now driving, admits of fair progress being made. In the cross-cut north, at the 145 east, the lode has been cut through, and proves to be altogether 10 ft. wide, composed of a mixture of quartz, arsenical mundic, capel, killas, and a little ore.—New Shaft, New South Lode: In the 16 east the lode at present is disturbed by cross branches. In the present end the lode is 4 ft. wide, and worth 4 tons of ore or 12l. per fathom. The lode in the 145 east is 5 ft. wide; a good course of ore, worth 10 tons or 40l. per fathom. In the 130 east the lode is 4 ft. wide, and worth 5 tons of ore or 15l. per fathom. This drivage is suspended for the present, and the men are put to drive south for the purpose of intersecting the south part of the lode, and also for draining Maunder's winze, sinking below the 115, in which the water is fast increasing. In Maunder's winze, sinking below the 115 east, on the south part of the lode, the lode is a good course of ore, worth 10 tons or 40l. per fathom.

EAST BASSET.—R. Pryor, E. Adams, June 7: There has been no noteworthy change taken place throughout this mine during the past week.

EAST VAN.—W. Williams, June 8: Tempest shaft is down 32 fms. We are driving both cross cuts at the 25 as quickly as possible. The cross cut south is driven 22 ft., and north 18 ft. We are still having spots of ore. Although we are at this point 70 fms. deep from surface, still the character of the ground indicates that we are shallow. Another weeks' crossing will throw much light upon matters.

FRANK MILLS.—James Rowe, N. Addems, June 6: Setting Report: The engine shaft is sunk 9 fms. below the 160; set to sink by twelve men, at 25l. per fm. The 160, to drive north of engine-shaft, on west lode, by four men, at 4l. per fathom; the lode is of a very promising appearance, and produces lead ore. The 160, to drive south of engine-shaft, on west lode, by four men, at 3l. 5s. per fathom; the lode here has much improved in the last few feet driving, now producing 8 cwts. of lead ore per fathom, and showing strong indications of further improving. The meeting with this discovery of lead below the great mass of spathose iron ore speaks well for the future prospects of the mine in depth, and looking at the very favourable change in the strata and composition of the lodes below the 145, we have every reason to believe that a permanent and profitable mine will be found below the spathose iron. Winze to sink in the bottom of the 145 south, on west lode, by two men, at 4l. per fathom; the lode has a very promising appearance, and produces lead ore. During the past month we have communicated the rise in back of the 72 north with the 60 north, and found the lode standing to the west of the 60. We have now set to drive north of this rise at the 60, by six men, at 4l. 5s. per fathom; the lode produces 10 cwts. of lead ore per fathom. We have nine tribute pitches, working by 21 men, at per ton for lead ore—one pitch, by four men, at 3l. 10s. per ton; one pitch, by three men, at 5l. per ton; two pitches, by four men, at 6l. per ton; and five pitches, by ten men, at 6l. 10s. per ton. Machinery and pitwork in good working order.

GAWTON COPPER.—G. Rowe, G. Rowe, jun., June 3: The lode in the 127 east is producing good stones of ore, and likely to improve. The lode in the stopes in the back of the 117 east is worth 10l. per fathom. No. 2 stope in the back of the same level, east of Morgan's winze, is worth 6l. per fathom. The lode in the 105 east is 4 ft. wide, yielding large rocks of mundic, and fine stones of ore; altogether of a very kindly appearance. The lode in the rise going up in the back of the 105 is worth 9l. per fathom. The stope in the back of this level, east of winze, is worth 6l. per fathom. The lode in the stope in the back of the 95 is worth 10l. per fm. The lode in the 82 east is without change during the past week. The stope in the back of the 82 is worth 9l. per fathom. The tribute department is without change since last reported on.

GLYN.—June 5: There is no alteration in the engine-shaft since my last advice. The pumps put on the lift on Friday last will complete 10 fms. sinking when down, and the 15 east is still in a fine lead-producing lode. The rise above the level is also yielding good lead ore. The winze under the 25 west is without alteration since reported last week. I am looking forward with great interest to the intersection of the lode at the next level. This will, we expect, be reached this month.

GREAT DYLIFFE.—E. Rogers, June 7: The shaftmen are making good progress in sinking the engine shaft below the 120. I hope by not cutting fully through the lode to be able to go down a convenient depth for dropping the sinking lift. In most of all the other points throughout the mine we are driving and sinking by the side of the lode for dispatch.

GREAT RETALLACK.—John Harris, June 3: Fair progress is being made in driving the cross cut south through the lode in the 40, but I have no change to report in its character, the end passing through seams of killas and decomposed white iron, with a little blende.

HINGSTON DOWN CONSOLS.—J. Richards, June 8: Bailey's Shaft: The cutting of plats at the 160 progresses satisfactorily. In the 160 west there is no change, the lode continuing to produce a little copper ore. The lode in the 150 west is still disordered by the cross-course; it produces, however, stones of rich copper ore. The lode in Rowe's winze, sinking below the 150 west, is 3 ft. wide, producing saving work for copper ore. In the stope in the bottom of the 150, west of Rowe's winze, the lode is worth 5 tons of ore or 20l. per fathom. In Nicholl's winze, sinking below the the 150 west, the lode is 3½ ft. wide, and worth for length carried (10 ft.) fully 10 tons of ore or 50l. per fathom. The lode in the stope in the bottom of the 150 west, east of Nicholl's winze, is worth 6 tons of ore or 20l. per fm. In the stope in the bottom of the 150 west, and west of Nicholl's winze, the lode is a good course of ore, worth 8 tons or 40l. per fathom. The lode in the three stopes in the back of the 150 west is worth on an average 5 tons of ore or 15l. per fathom. In the 140 west the drivage is still continued in a northerly direction. The lode in the two stopes in the bottom of the 140 west is worth on an average 4 tons of ore or 10l. per fathom.

LADYWELL.—A. Waters, June 8: Things are going on here as for some time past. Tributers are getting fair wages. We have to-day sold 20 tons of lead ore, realising 280l.

LLANRHAIADR.—Capt. E. Pascoe, June 7: The ground in the deep adit cross cut is very much harder; the forebreast is still letting out water. There is also a little spar on the faces. We have communicated the level west of winze, below No. 4, with No. 4 level. We shall now timber the top of rise, and hang a windlass, that we may not interfere with the other winze. We shall draw our lead-stuff through the newly-holed rise, and lay rails in the level driven on the north part of the lode, so that the men may have no hindrance in sinking. It will take a little time before we shall be ready for sinking the winze. I have put one man and one boy to stope over No. 3; after a little preparatory work this stope will pay well for awhile. I trust something else will turn up against then.

MARKE VALLEY.—William George, James Stenlake, Francis Renals, June 2: Setting Report: To drive the 148 cross-cut south, from Salisbury shaft, by nine men, at 30l. per fathom; here the ground continues hard, consequently the progress is slow. To drive the 136 west, on Marke's lode, by four men, at 15l. per fathom, yielding ½ ton of ore per fathom. To stope the back of the 124, on Marke's lode, by two men, at 3l. 10s. per fathom, worth 2½ tons of ore per fathom. To drive the 112 east, on Marke's lode, by two men, at 7l. 10s. per fathom; the lode in this end has a very promising appearance, and yields some very good ore, but at present not sufficient to value, yet we are very hopeful from its character, as well as from the quantity of water now issuing, that we shall get an improvement shortly. To stope the bottom of the 100, on Marke's lode, by four men, at 6l. per fathom, worth 5 tons of ore per fathom. To stope the bottom of the 80, on south part of Rosedown lode, by four men, at 7l. 10s. per fathom, worth 6 to 7 tons of ore per fathom. To rise a winze in back of 70, on Rosedown lode, by two men, at 8l. per fathom, worth ½ ton ore per fathom. To stope back of 70, on Rosedown lode, by four men, at 4l. 10s. per fathom, worth 3 tons of ore per fathom. To rise in back of 60, on Rosedown lode, by three men, at 9l. per fathom, worth 1½ ton per fathom. To stope bottom of 60, on Rosedown lode, by four men, at 6l. per fathom, worth 2½ tons of ore per fathom. No. 1 stope in back of 60, on Rosedown lode, by four men, who are engaged in stripping down south side, yielding 4 tons of ore per fathom. No. 2 stope in back of 60, on Rosedown lode, by four men, at 4l. 15s. per fathom, worth 3 tons of ore per fathom. To sink a winze in the bottom of the 50, on Rosedown lode, by four men, at 8l. per fathom, worth 2 tons of ore per fathom. In order to ventilate to the 50 and 60 ends as speedily as possible we have thought it desirable to suspend the driving of the 60 end, and to employ the men to communicate with the rise from back of the 60. No. 1 stope in back of 50, on Rosedown lode, by two men, at 4l. 10s. per fathom, worth 2 tons of ore per fathom. No. 2 stope in back of 50, on Rosedown lode, by four men, at 6l. per fathom, worth 3 tons per fathom. To drive the 30 west, from cross-cut on Rosedown lode, by four men, at 10l. per fathom, worth from 1½ to 2 tons per fathom. The four men previously engaged in stoping the bottom of the 30, on Rosedown lode, are now stripping down the side, which will yield 7 tons of ore per fathom. To drive the 20 west, on Rosedown lode, by four men, at 9l. per fathom; the lode is 3 ft. wide, but unproductive. No. 1 stope in bottom of the 20, on Rosedown lode, by six men, at 4l. per fathom, worth 5 tons of ore per fathom. No. 2 stope in bottom of the 20, by four men, at 5l. per fathom, worth 2½ tons of ore per fathom. No. 1 stope in back of this level, by four men, at 5l. per fathom, worth 4 tons of ore per fathom. No. 2 stope is suspended, and the men put to strip down south side, worth 2½ tons per fathom. To drive the 10 west, on Rosedown lode, by four men at 7l. per fathom; here there is a very promising lode, worth 1 ton per fathom. The six men employed in new shaft putting up penthouse are taking up the water in pipes preparatory to clearing the accumulated stuff in rise, which they will commence to do about the middle of next week. To drive Salisbury adit west, by two men, at 12l. per fathom. A pitch in back of the 112, on Marke's lode, by two men, at 13s 4d. in 1l. Ditto, on Rosedown lode, by two men, at 10s. 6d. in 1l. Ditto, in bottom of the 80, on Rosedown lode, by two men, at 10s. in 1l. Ditto, by four men, at 9s. in 1l. Ditto, in back of the 90, by two men, at 6s. 6d. in 1l. Ditto, in the bottom of the 40, by four men, at 10s. in 1l.

MARKE VALLEY.—William George, James Stenlake, Francis Renals, June 8: Good progress is being made in the varied bargains reported on Friday last, which are without change worthy of remark.

NEW CHIVERTON.—J. Trewartha, June 8: The sumpmen are making good progress about their 25l. bargain—cutting cistern plat and fixing lift. There is nothing new to notice in either of the bargains or pitches since last report.

NEW CONSOLS.—Richard Pryor and Son, J. Jenkin, H. Vial, June 7: The whole of the stopes and tutwork bargains throughout the mine continue to look well, and we are getting on well with the forking of the western part of the mine. All our surface work is going on satisfactorily. Saturday next being our pay and setting, a full report shall be sent you as usual.

NEW HENDRA.—W. Rowe, June 3: Pay and Setting Report: The deep adit end is set to drive by six men, for the month, at 8l. per fathom: the ground and lode in the end present just the same features as when reported on last. We have just passed through a small branch, which contains a little tin; the level has been dialled, and we find that the direction of our end is right for the unwatering of the old mine.

NEW ROSEWARNE.—E. Hosking, W. Bennetts, June 3: Setting Report: To drive the 67, west of Pool's shaft, by six men, at 6l. per fathom; the lode is 1½ ft. wide, presenting a very favourable appearance, and is worth for copper ore 6l. per fathom. To drive the 58, west of Pool's shaft, by two men, at 4l. per fathom; the lode is 2½ ft. wide, producing a little copper ore. To drive the 46, west of Pool's shaft, by two men, at 3l. per fathom; we have again resumed the driving of this end, as nothing of value was discovered in opening on the branch eastward.

— E. Hosking, Wm. Bennetts, June 8: There is no change in either of the bargains since our advice of Saturday last.

NORTH LAXEY.—R. Rowe, June 7: The lode in the 136, driving north of the engine-shaft, is daily improving for lead, now worth 5 cwts. per fathom. In the south end the lode is intermixed throughout with lead, blende, and copper. In the 84 end north we have tapped more water, and there is more spar in the lode (which is 1 ft. wide); the country rock is also more favourable for lead. The stopes are valued for lead as follows:—The 121 north, 15 cwts. per fathom; the 110 north, 12 cwts. per fathom; 110 rise, 10 cwts. per fathom; 70 stope, 15 cwts. per fathom, 60 stope, 10 cwts. per fathom; 50 stope, 12 cwts. per fathom.

NORTH TRESKERBY.—R. Pryor, June 7: During the past week there has been no change worthy of remark in the tin stopes east and west of Highburrow. The lode in the shallow adit level, east of Doctor's engine shaft, has somewhat improved since last reported on, being now worth about 8l. per fathom. On Thursday last we sold 19 tons 9 cwts. of copper ore, which realised 94l. 4s. 7d.

OLD TREBURGETT.—W. Hancock, W. T. Bryant, June 8: On Thursday last we set the engine-shaft to sink below its present depth 7 fms., to nine men, at 25l. per fathom, and if completed by the end of August to have 5l. premium. In the 90, south of shaft, on the east part of the lode, the ground has improved for driving, and is producing stones of silver-lead. In the 80 south the lode is of a good appearance, worth about 13l. per fm. No. 2 winze below this level is worth 10l. per fathom. In the 70 south, on the cross cut east, we have intersected a branch about 4 in. wide, producing a little lead and blende. No. 4 winze under this level is improved, worth now fully 55l. per fathom, but I afraid we are down to water. This winze is down nearly 8 fms. below this level, and about 25 fms. in advance of the 80, which looks well for the latter. Fair progress is being made in cutting down and securing Masey shaft from surface to shallow adit. Our tributers are working well, and some of them making good wages. We sold to-day 33 tons of ore at 25l. 5s. 6d.

PARYS MOUNTAIN.—Thos. Mitchell, June 8: The ground in the 90 cross-cut south is looking exceedingly promising, with a further increase of water issuing from the middle of the forebreast. The 90, east of engine-shaft, is producing good patches of copper ore, but the ground has become rather hard and spare for driving. The 45 east continues to look very well, which shows that the ore ground is lengthening in this direction. No change worthy of notice at any other point.

PATELEY BRIDGE.—C. Williams, June 8: The Lumb vein, going east in the south cross-cut, in the 10, is looking remarkably well, and the rich course of ore that went down in the sole of our drift, a few yards behind the present forebreast, seems to be rising up rapidly over the end, and I have every reason to believe that we shall have a very productive lode in a few yards further driving, worth at present 13l. per fathom for lead ore. Fielding's vein, going north-west in the east cross cut, in the 20, is 3 ft. 6 in. in width, and producing 1½ ton of lead ore per fathom, and likely to improve. The same vein in the south-east end will produce 1 ton of lead ore per fathom, and looking highly promising. The west cross cut, in the 20, is without change. The engine-shaft, sinking under the 20, is down 9 fms. 1 ft., in strong limestone formation of promising character, and no doubt when the vein is intersected it will be found as rich as it was left in the top workings—18 in. wide of solid metal. The Pringap vein is without any material change since my last, still producing strong mixture of lead ore; ground rather light to work.—Gilfield Level: The Sun vein, going east from the shaft under this level, is improving, now producing 24 cwts. of lead ore per fathom, and very promising. The stope over this level is producing 1½ ton of lead ore per fathom. Dressing, &c., going on regularly.

PEDN-AN DREA UNITED.—Wm. Tregay, W. Prideaux, J. Pope, June 3: Sump: The lode in the 160 west end is worth 10l. per fathom. There has not been much progress made in this end for the week, as we have had to stop the engine for 12 hours in order to repair balance bob; the water is now nearly in fork. In the 140 west end the lode (Martin's) is worth 10l. per fathom.—Cobbler's Shaft: The lode here is worth 10l. per fathom. In the 130 west end the lode (Martin's) is worth 12l. per fathom.—Cardozo's: In the 100 west end the lode (north) is worth 8l. per fathom. In the 100 west rise the lode (north) is worth 8l. per fm. In the 90 west end the lode (north) is worth 20l. per fathom. In the 80 west end the lode (north) is worth 20l. per fathom. In the 60 west end the lode (north) is worth 8l. per fathom. In the 55 west end the lode (north) is worth 12l. per fathom. In the 47 west end the lode (north) is worth 8l. per fathom. There are no other changes to report.

PENHALLS.—S. Bennetts, W. Higgins, June 3: Both the 70 east and west ends continue much the same as last reported on. The 60 east end is worth 8l. per fm., and the same level west, on the same section of the lode, 10l. per fathom. The lode in the 50 north is from 2 to 3 ft. wide, containing some good stones of tin, but as yet the end is too near the cross-course to see the lode in a settled state. The 45 west is worth 12l. per fathom, and the 45, east of the Shop shaft, is worth 8l. per fathom. The various stopes above the 50 are not quite so productive as they have been, while those above the 60 are opening out very satisfactorily.

PENNERLEY.—W. T. Harris, J. Delbridge, June 8: There is no particular change in the mine calling for remark. The various points are in full operation, making good progress, and quite equal in value to what was given in our setting report of last week. We purpose to sample on Monday next the usual quantity of lead.

PLYNLIMMON.—John Garland, June 6: New Shaft: The men have this day commenced to draw out the water; sinking will shortly be resumed. In the 24, east of new winze, the lode is 1 ft. wide, composed of clay slate, mundic, calc spar, and lead ore, producing of the latter full 2 tons per fathom, a splendid looking lode, with every indication of an early improvement. The stope over this level, east of new winze, produces full 1 ton of lead ore per fathom. The stope in the bottom of the 12, east of cross course, produces 1½ ton of lead ore per fathom. We shall shortly be able to commence a new stope behind the 24 end, which will add to and enable us to make regular monthly samplings. I also purpose commencing a winze below the 24, about 18 fms. east of new shaft, for ventilating and expediting the opening out of a 36 fm. level. I am pleased to say that we have a good supply of surface water, and drawing and dressing have to-day been resumed full swing, preparing for another sale of lead ore at an early date. On the whole, I consider the mine to be looking better than for two years past. Good progress is being made in the preparation of the new line of horizontal rods. We shall soon commence erecting the same. The machinery throughout the mine is all in fair working order.

PORT NIGEL.—J. Manley, June 7: The lode in the 56 east is of a most encouraging character, being composed of fluor-spar, quartz, copper, blende, and lead ore, worth for the latter 25l. per fathom. In the 68 west the lode has a very promising appearance, producing stones of lead and copper, and showing indications of a productive lode near at hand. The lode in the 68 east is more mineralised, yielding good spots of lead, and very promising for an early improvement. We have sent out samples of 46 tons of lead ore for sale on the 14th inst.

PRINCE OF WALES.—J. Andrews, J. Pryor, June 3: The ground in the 77 cross cut north is hard, which looks like capels of a lode, but this we shall be able to say more about in the course of a few days. In the 55 west we have intersected the lode west of cross-course, but as we have up to the present time only blasted one hole into it we are not able to say much about it, but so far as seen it looks very promising, yielding mundic and yellow copper ore. The lode in the 45 west continues to look very promising, and yielding good saving work for copper.

PROVIDENCE MINES.—W. Hollow, S. Rogers, June 2: Setting for the four weeks ending June 30:—Tutwork: Hawks's Shaft: Under contract to sink below the 56, by six men, at 15l. per fathom. The 56 to drive west, by four men, at 5l. per fathom. The 56 to drive east, by four men, at 4l. per fathom. The 46 to drive west, by four men, at 13l. per fathom. The 46 to drive east, by two men, at 7l. per fathom. To sink the winze below the 46, by six men, at 10l. per fathom.—Higgs's Shaft: The 15 to drive on a south branch east, by four men, at 12l. per fathom. To rise and stope in the back of the 75 east, by four men, at 10l. per fathom. To sink winze below the 75 east, by four men, at 9l. per fathom. Filling, landing, &c., by four men, at 11l. per fathom. Total, 42 men.—Tribute: Hawks's Shaft: A pitch in back of the 26 west, by three men, at 13s. in 1l. A pitch in bottom of the 36 west, by eight men, at 12s. in 1l. A pitch in the back of the 36 west, by four men, at 14s. in 1l. A pitch in the back of the 46 east, by six men, at 15s. in 1l. A pitch in the back of the 46 west, by four, by four men, at 10s. in 1l. A pitch in the back of the 46 east, by four men, at 13s. in 1l. A pitch in the back of the 56 west, by six men, at 10s. in 1l.—Higgs's Shaft: A pitch in No. 6 carbona in the 75 east, by two men, at 15s. in 1l. A pitch in the bottom of the 75 east, by four men, at 14s. in 1l. A pitch in the back of the 75 east, by two men, at 15s. in 1l. A pitch in the back of the 75 west, by two men, at 15s. in 1l. A pitch in the back of the 75 west, one man, at 15s. in 1l. A pitch in the bottom of the 75 east, by two men, at 15s. in 1l. A pitch in the back of the 75 east, by two men, at 13s. in 1l. Total, 50 men.

RELISTIAN CONSOLS.—J. Curtis, June 7: Setting Report: Duke's shaft to sink below the 24, by six men, at 18l. per fathom. Lode large, with good stones of copper ore, with tin and blende in it.

RHEIDOL.—John Ridge, June 3: In the rise in back of deep adit level the lode is 4 to 5 ft. wide, yielding upwards of 5 tons of blende per fathom, and looks kindly for improving; re-set to six men, at 7l. per fathom.

ROMAN GRAVELS.—A. Waters, June 8: The various points throughout the mine continue to open out prosperously, the yield of ore being equal to recent valuations. We have to-day sampled 200 tons of lead ore, for sale next week. Surface work is going on regularly and well.

ST. PATRICK.—W. Francis, June 7: The 120 yards cross-cut north has been driven over 7 fathoms during the past month, and continues to present the same favourable indications in the cross-course, with lead ore scattered throughout. The 90 yards north is without change to note. The 60 yards north, in the chert, has been driven 4 fathoms in fine bearing chert, and is as desirable a driving in those measures as could possibly be wished for.

SOUTH ROMAN GRAVELS.—John W. Powning, June 8: Sheffield: There is sufficient room cut at the 10 for angle-bob, and we shall proceed forthwith to put in the bearers and cistern at the 30 for the new 10-in. plunger, after which we shall fix this lift, put in angle-bob, bring down the main rods, &c. I hope to have all in readiness and the shaft in course of sinking by the time named in a former report.

SOUTH TOLCARNE.—Joseph Vivian and Son, J. Paull, June 8: The engine-shaft has been divided and cased from the 40 to the 50, and the latter level driven 8 ft. east. We have three days' more work to do in cutting ground before commencing to drive the 50 north to Fraser's lode.—Fraser's Lode: In the 40, east of engine-shaft cross cut, the lode is 4 ft. wide, and worth about 6l. per fathom. In the same level west the lode is 3½ ft. wide, and worth about 3l. per fathom. In the stope east of Heathorne's winze, in the back of the 40, the lode is small at present, and worth about 2l. 10s. per fathom, but we shall get into a larger and more valuable lode as we extend the stope further east.

SOUTH WHEAL FRANCES.—A. T. James, June 7: Pascoe's shaft is now 14 fms. below the 185, and is being urged on by 12 men, at 33l. per fathom; the ground is a little more favourable for progress, and we hope in sinking 3 fathoms further to intersect the flat lode. The 185 is being driven east of cross cut, on the flat lode, by six men, at 12l. per fathom; the lode is worth 15l. per cubic fathom. A stope in the back of this level is worth 15l. per cubic fathom; let to six men, at 7l. per fathom. The 185, west of cross cut is being driven, by six men, at 12l. per fathom; this level is being driven in the middle of the great lode, which is now worth 10l. per cubic fathom. Both ends present a very promising appearance, and the prospects of opening out a productive mine highly encouraging.

TANKERVILLE.—A. Waters, June 9: Missed post last night. Bottom end Tankerville lode 15 ft. wide, worth 14 tons per fathom. Stopes, &c., looking well. Full report to night's post.

TEMPLE.—June 7: We are pushing on the level on Pryce's lode as fast as our command of labour will allow, and I am glad to report that the lode continues to look very favourable, the leader being full 3 ft. 6 in. wide, composed of leaders of blende, lead ore, spar, and carbonate of lime, the lead ore being larger and thicker than we have before seen it; and from its continuing to improve as we get deeper into the hill I think we cannot be far from the course of lead ore. I have duly received cheque for pay on Saturday.

TREBEIGH CONSOLS.—John Gifford, June 8: We hope to get the walls of the engine house up by Monday next, and commence putting up the woodwork for the roof on Tuesday. We are getting on with taking out the engine at Deerpark as fast as the nature of the work will admit.

TRELEIGH WOOD.—Edwin Hosking, Wm. Goldsworth, June 2: We have to-day set the following bargains: To drive the 56 west of cross cut, by six men, at 23l. per fathom; the lode or part carrying is 6 ft. wide, worth 14l. per fm.; the end is letting out more water, and has a promising appearance. To drive the 44 east of the cross-course by four men, at 12l. per fm.; the part carrying 5 ft. wide is worth 12l. per fathom for tin. The north side of the lode carries a little copper, which we consider a favourable indication. In the 44 north cross-cut we have cut through the north part of the lode, and set the men on its course at 7l. per fathom: the lode is 3 ft. wide, yielding stamping work. We have six pitches working by 18 men, at an average tribute of 12s. 3d. in 1l., the tributers to be paid at the rate of 38l. per ton for black tin. We have taken in about 3 tons of tin in the past month, which we are now stamping, and as some of the tributers have not sampled we hope to have more tin against the next sampling.

— E. Hosking, W. Goldsworthy, June 7: There is no change in the bargains since our setting report on Saturday last.

WEST CRAVEN MOOR.—D. Williams: The following bargains have been let for this month:—The cross-cut south at Blackhill level to the parallel lodes, to four or six men, at 130s. per fathom, including tramming the stuff; the ground is a little easier for driving, and better progress is made. To drive Blackhill level east upon the lode, to six men, at 120s. per fathom; the lode in the forebreast is 2 feet wide, and composed of the usual matrix for producing ore in paying quantities. To drive north and south upon the cross vein to cut the other parts of the lode, at 120s. per fathom. On Monday next we shall place two men to rise and stope the ore ground we have driven through.—West Shaft: We have completed the casing, dividing, and footway from surface to the bottom, cut plat, and driven 6 fms., at 140s. per fathom; the lode is fully 2 ft. wide, composed of limespar, barytes, and lead ore, worth 10 cwts. per fathom. In 3 or 4 yards we shall cut the course of ore gone down in the sole of the shallow level, worth 2 tons per fathom. The end west, to four or six men, at 130s. per fathom; the lode is worth 15 cwts. of lead ore per fathom.—New East Shaft: Two men to drive the 11 fm. level north-west upon No. 1 lode, at 80s. per fathom; the lode is 3 ft. wide, and producing good lead stuff. Four men to drive the 20 north west upon No. 1 lode, at 150s. per fathom. Four men to cross-cut south to cut Harker's and Foxhole lodes, at 150s. per fathom; in this cross-cut we have driven through the third lode, about 6 in. wide, chiefly composed of limespar, gossan, and spots of lead ore; we hope to cut Harker's lode this month. Four men to drive east and west upon No. 2 lode, worth at present 1½ ton of lead ore. We have two metal pitchers on surface set at 52s. and 56s. per ting respectively, including raising and dressing the ore. Our new machinery is working very satisfactorily, and good progress being made with the new dressing floors.

WEST GODOLPHIN.—J. Pope, June 7: Setting Report: Caunter Lode: The 60, pressure shaft, by nine men; we are pushing on the necessary work for fixing the plunger lift as fast as possible, and hope to be in course of sinking this month. The 60, driving north, to two men, at 3l. 10s. per fathom; lode 2 ft. wide, worth 5l. per fathom for tin.—Wilson's Lode: The 60, driving west, to six men, at 6l. per fathom; lode 2 ft. wide, worth 5l. per fathom for tin. This lode is looking kindly for an improvement. The 60, driving east, to four men, at 6l. per fathom; lode 3 ft. wide, 6l. per fathom for tin. The 50, driving west, to six men, at 6l. per fathom; lode 4 ft. wide, worth 12l. per fathom for tin. The 50, driving east, to four men, at 5l. per fathom; lode 2 ft. 6 in. wide, worth 6l. per fathom for tin.—Caunter Lode: The 50, driving north, to four men, at 6l. per fathom; lode 1 ft. 8 in. wide, worth 7l. per fathom for tin.—Wilson's Lode: The 40, sinking winze west, to four men, at 4l. per fathom; lode 3 ft. wide, worth 7l. per fathom for tin. The 40, stoping east, to six men, at 3l. per fathom; lode 4 ft. wide, worth 7l. per fathom for tin. The 40, stoping east, to six men, at 2l. 12s. 6d. per fathom; lode 4 ft. wide, worth 8l. per fathom for tin. The 30, stoping east, to two men, at 1l. 15s. per fathom; lode 4 ft. 6 in. wide, worth 4l. per fathom for tin. The 10, at Boulton's shaft, by six men. The middle adit, driving west, to four men, at 2l. 10s. per fm.; lode small.—Surface: Gladstone's Shaft sinking, to six men, at 1l. 10s. per fathom for 10 fms. stent; lode small. These men are engaged on a winze plat preparatory to sinking below the 10, which, I think, they will complete this week, when I shall set to them. We have four men at the 60, and two men at the 50, stripping the side of the levels on Wilson's lode.—Caunter Lode: The 60, stoping south, to two men, at 10s. in 1l.; lode worth 2 ft. 6 in. wide, worth 5l. per fathom for tin, at a standard of 42l. per ton for the tin.—Pink Lode: The 40, stoping west, to two men, at 10s. in 1l.; lode 1 ft. 3 in. wide, worth 5l. per fathom for tin, at a standard of 42l. per ton for the tin. We are pushing on the erection of the new stamps as fast as possible, and hope to get it to work this month. The water is falling off at our stamps, which will make against our sale of tin this month.

WEST MARIA AND FORTESCUE CONSOLS.—Wm. Skewis, June 7: West Maria Lode: The cross-cut south, in the 104, at Willesford's shaft, is spare for driving, but we are pushing it on as fast as possible. The caunter lode in the 93 west is small, and producing a little copper ore and mundic, but not to value; the end is being driven by six men with all speed, so as to intersect the north lode as soon as possible.—North Lode: The lode in the 82 west is disordered for the time, is producing a little copper ore, and letting out water very freely. In the 71 west the lode is from 2 to 3 ft. wide, worth 15l. per fathom. The lode in the 60, east of the cross-cut, is 2 ft. wide, containing some good stones of copper ore, and looking kindly for improvement. The lode in the end, west of the cross-cut, is 3 ft. wide, composed of hard capel, with a little copper ore and mundic, and looking very promising. There is no change in the rise in back of this level.

WEST MILWR.—W. Francis, June 7: The 70 yard cross-cut, south from West Meadow shaft, shows better indications than it has for many fathoms, and some promising feeders are met with occasionally, with a little lead ore. I fully expect the Milwr vein when cut will be well charged with ore, and immediately profitable.

WEST PORT NIGEL.—M. Whitford, June 7: This mine is situated in the parish of Aberdaron, in the county of Carnarvon, in which an adit level has been driven some 60 or 70 fms. on a lode varying from 2 to 5 ft. wide, composed of quartz, barytes, mundic, impregnated with lead and copper. In this drivage two other lodes have been intersected, highly promising in character and appearance; producing some good stones of copper ores. The stratum in which these lodes are embedded is clay slate, and very congenial for the production of mineral. A winze is being sunk below the adit level to prove the lodes some 20 or 30 yards below, and from what has already been seen large deposits of mineral are anticipated. In my opinion, if this promising property is vigorously developed it would become remunerative.

WEST TANKERVILLE.—A. Waters, June 9: The 75 south is improving. Other places as last week. We sold this week 25 tons of lead ore, which realised 365l. 5s.

WEST WHEAL TOLGUS.—June 7: Taylor's shaftmen are getting on very well in sinking. The 135 end men have not taken down any lode since our last report, but shall commence to do so to-morrow. No. 1 winze, in the 125, west of shaft, is looking much the same as last week, yielding 6 tons of ore per fathom. No. 2 winze is quite up to last week's report, and a little over. The winze is down 4½ fms. below the 125, and quite dry (a good sign), and is yielding all of 17 tons of good ore per fathom. We have sunk 2 fms. since setting day, which has yielded 34 tons of ore, and we are safe for the next sampling. The other parts of the mine are without alteration.

WHEAL CREBOR.—J. Andrews, June 6: The ground in the 120 cross cut south is hard and spare for driving. In the 108 end east we continue to drive by the side of the lode. In the 72 east we have cut through the lode, which is 7½ ft. wide, composed of quartz, capel, and mundic, and yields stones of copper ore. In the 48 east the part of the lode we are carrying is worth 10l. per fathom. The two stopes in back of the same are worth 30l. per fathom each.

WHEAL GRENVILLE.—T. Hodge, June 7: In the 130, east of the western shaft, the lode has undergone a great change; the part carried (5 ft. wide) is of soft prian, flookan, &c.—a very nice looking lode, worth for tin 12l. per fathom;

In the 140 cross-cut we have passed through a branch containing tin; the main lode is near at hand, and may be met with at any time. No other change worthy of note.

— June 8: North Shaft: The 130, east end, is letting out more water; we shall suspend the same for a few days to see whether the water will drain down a little. The lode in the end is worth 12*l.* per fathom. We are breaking lodestuff in the 140 cross cut to-day, but the main ore-bearing part is still before us.

WHEAL UNY.—W. Rich, M. Rogers, W. Bennetts, June 3: The 110 end, east of King's, is worth 8*l.* per fathom. The winze in the bottom of this level is worth 12*l.* per fathom. The 120 east is worth 12*l.* per fathom. The rise in the back of this level is worth 10*l.* per fathom. The 140 east is worth 12*l.* per fathom. The 150, east of Goodinge's, is worth 5*l.* per fathom. The 150, west of incline, is worth 12*l.* per fathom. A winze in the bottom of the 150, west of the sump, is now worth 6*l.* per fathom.

WHEAL KITTY St. Agnes).—S. Davey, R. Harris, June 3: New Shaft: Pryor's Lode: In the 154 fm. level driving north of shaft, we have cut what we believe to be the bottom capel of the lode, which is hard and wet. We hope in the course of another week to open sufficient to give particulars. The eastern mine would have been thoroughly drained but for the breaking of the top door piece in the 44 plunger-lift last night. This is being changed, and we hope to be ready for work in a few hours. The lode in the 142, driving west of shaft, is 4 ft. wide, worth for tin 13*l.* per fathom, a good looking lode. The lode in the 142, driving east of shaft, is worth for tin 13*l.* per fathom. The lode in the rise in back of the 142 west, is 2½ ft. wide, worth for tin 10*l.* per fathom. The lode in the 130, driving west of shaft, is worth for tin 15*l.* per fathom. The lode in the 65, driving west of shaft, is not yet taken up, but shall do so in the course of another week. The lode in the winze sinking below the eastern adit level is producing a little tin, but nothing to save. There is no change in either the 100 or 90 at sump, worth respectively 6*l.* and 7*l.* per fathom.

THE ALMADA AND TIRITO CONSOLIDATED SILVER MINING COMPANY (LIMITED).

MINA GRANDE AND DIOS PADRE.

Frank W. Breach, March 30: The 12 fm. level in Mina Grande improves, but is very hard. The tunnel end wanted only 15 ft. to reach the Dios Padre on Saturday last, and is in the same ground, hard, but favourable for driving. In the rise south of the end we still have some good stones of ore—green and black about equally mixed, but without zinc.

April 6.—The Mina Grande 12 fm. level is improving as we drive to the south, and the rise also shows more ore. As we are now opening out the works the output from this part of the mine will increase. We are now cutting the plat at the shaft in this level to prepare for another sink. In the tunnel end we are within 8 ft. of the Dios Padre boundary, and have more spar in the end.

April 27.—Telegram received from Mr. Breach: "Mina Grande ground at present disordered by limestone in the 12 fm. level. Labour abundant."

June 6.—Telegram received from Mr. Breach: "Lode west of cross-cut 3 ft. wide, ore black, coppery, and looking well. Ore vein, tunnel end, promising. Mina Grande lode poor in the 12 fm. level."

PROVIDENCIA, TIRITO, AND NEW EAST LODE.

Frank W. Breach, March 30: Underground the stopes throughout remain the same as last week, and the improvement in the back of the New East lode continues. In the Providencia Mine the cross cuts in the 32 and 10 fm. levels east are in the same ground, rather better for working, and although almost a pure limestone it is not country ground. The cross-cut east in the upper works in the Providencia is in to the footwall, and we find the lode in that part has an eastern underlie. In this cross cut we found a vein of green ore that perhaps may pay to follow, but like all the lode in this mine it is only balls of ore. We are now driving to the north on it. In the Tirito we are cross cutting on the level of the tunnel to sink for the new east lode further to the south, and although after driving through an apparent horse of ground we cut spar with very good copper ore, it does not yet look very promising.

April 6: In the Providencia Mine the stopes remain as usual. In the cross-cuts in the 32 and 10 fm. levels the ground continues the same. From the ladder way leading from the tunnel to the Purisima we have commenced a cross-cut in the hope of striking the New East lode 16 fms. above the tunnel level; we are now driving through hard spar. In the cross-cut on the tunnel level in the Tirito Mine to try for the New East lode further to the south, we are now following the one reported last week. In the stopes over this level we have now a vein of very good black ore about 2 ft. wide, which appears inclined to separate itself from the red and green ore, of which the vein is composed. The engine-shaft is still in easy ground. We are now down 30 ft. below the 32. I omitted to mention that after some little trouble with the water we have commenced to sink a winze in the New East lode, and have very good ore and comparatively dry ground. I am now making out the accounts for last month, and I find all classes of ore assay well for copper, varying from 5·6 per cent. to 8·7 per cent. by wet assay.

April 27: Telegram received from Mr. Breach: "New East lode improving. The directors have received transverse sections of the Mina Grande and Tirito Mines, which can be seen at the offices of the company. The first of these is especially important, as proving distinctly that there are two large branches in the Mina Grande which will probably join about 20 fms. under the tunnel level.

FOREIGN MINES.

ST. JOHN DEL REY.—The dividend to be recommended at the approaching meeting, on the 28th inst., will be 25 per cent. for the half year.

CAPE COPPER.—At a meeting of the directors of this company, held at the offices, on Wednesday, a dividend of 20*s.* per share, free of income tax, was declared, payable on June 24.

ST. JOHN DEL REY.—Telegram from Morro Velho, dated Rio de Janeiro, June 4: Produce eleven days, second division of May, 15,530 oits.—6906*l.*; yield 7·5 oits. per ton.

DON PEDRO.—Captain's report, May 9: Stoping: The incline in the bottom of the No. 2 stope in the Canoa has been suspended, and the stope itself resumed. In other stopes nothing new, every point in the mine being poor.—Drainage: Dawson's wheel was stopped 3¼ hours on the 1st to fix the 6 inch lift, which was put to work on the 2d, when the wire rope broke. The self acting flusher took the water off Dawson's wheel in a very satisfactory manner. The wheel was idle 4½ hours; water forked by 12 A.M. on the 8th, and sinking resumed, but about 12 P.M. the water rose a little and stopped the sinking.—Surface Explorations: North Gully: From the western driving we have commenced an incline rise on the lode. The present end is about 20 in. thick, and of low quality. In the incline two fissures have been met with one over the other. We have commenced a vertical rise below them to prove whether the lode continues. The vertical rise from the old exploration level has been communicated to the incline. No auriferous ground was met with in this rise. The present appearance of this exploration is most discouraging, the lode eastward being disordered, and westward towards the outcrop we cannot, as at present seen, have much ground to come away.

— Telegram, Rio, June 8: Produce for the month (May) 2200 oits

RICHMOND CONSOLIDATED.—Cablegram from the mine at Eureka, Nevada—Hall, London: Week's run, 840,000.

— Cablegram from the mine at Eureka, Nevada—Hall, London: Struck ore in the 800 drift. Can't say whether main lode, but 9 ft. thick.

CHICAGO (Silver).—Cablegram from Mr. W. S. Goldie, the superintendent at the mine—I have remitted you by draft 2500*l.*

ALMADA AND TIRITO.—Cablegram from Mr. Breach: Dios Padre Mine—Lode west cross-cut 3 ft. wide; ore black, coppery; looking well ore vein; tunnel end promising. Mina Grande lode poor in the 12 fm. level. April loss, 350*l.*

EBERHARDT AND AURORA.—Capt. F. Drake has handed to the directors the following telegram from his brother, in charge at the mines—22,000*l.* produced for the month from May 6 to June 6. No new development.

CAPE COPPER.—Extract from letter received from Capt. Tonkin, dated Cape Town, May 4: "By the last letters I received from the underground agents at Ookiep, the 80 fm. level east is reported to be worth 5 tons of rich quality copper ore per fathom, and a winze that we started to sink below the 68 in the eastern part of the mine is looking well. The 68 fm. level east is rather poor, but the stopes in the immediate neighbourhood are yielding very well indeed."

— Despatches received from the colony to day (June 8)—Returns for April: Ookiep, 950 tons of 27 per cent.; Speetakel, 40 tons of 33 per cent.

CEDAR CREEK.—T. B. Ludlum, May 18: I last had this pleasure on the 11th inst., since when work has continually progressed, excepting in the Badger claim and Yankee Tunnel. In the Badger claim we had the misfortune on the 11th inst. of having the small tunnel leading into the shaft completely obstructed by the caving of a high bank of fine gravel, which was overhanging. We realised from the commencement of washing that it was liable to fall at any moment, and were cutting the bank so as to have it fall away from the tunnel, but supported on drift timbers it came down sooner than we desired. We had taken the precaution to cover the shaft above, which alone prevented it from being filled. We were obliged to go back to solid gravel and run an incline into the small tunnel before we could resume washing, so that it was not until last evening that it was sufficiently cleared away for men to work safely in the tunnel below. When the cave came down we immediately turned the water into the Yankee, and resumed washing that in, so that with the exception of the slight cost of running the incline, the damage would not have amounted to anything were it not that we were obliged to suspend tunnelling. The pit is now clear, however, and we are washing to good advantage. The Yankee Tunnel is now being driven day and night. The Yankee claim is now in good working order, and runs alternately with the Badger. The Pacific claim continues washing to good advantage. The bank of gravel is very poor, but being soft we are enabled to remove it very rapidly. The Jehosophat claim has disappointed me so sadly that after we have washed off the bottom, which we are now engaged in doing, and which we will finish in about 10 days, I do not propose to wash therein any more until Yankee Tunnel is completed; for either we do not save the gold, owing to our short string of sluices, or it does not lay so high on that side of the channel. The Central claim we cleaned up on the 12th and 13th instant after a short run of 14¼ days, realising about 814*l.* This claim is worked out on the present level, and I have obtained from the owners of the Little Pin Top claim the right of way through their ground, whereby I can obtain a bank of the lower gravel of from 40 to 60 ft. extending over a portion of the north-west corner—enough I think to occupy another season. This claim has not proved itself to be rich, but has always paid full rates for water, which I think it will continue to do. The Gold Run claim has extended its bedrock cuts so near the bank that we can reasonably expect the current run to be a good run for that claim. I expected ere this to be enabled to forward a cost-sheet for April, but as I am not yet in receipt of the mint certificate I cannot do so. The enclosed letter from the bank explains the cause of delay.—Water Ditches: Our ditches are conveying the full capacity of water, and I am utilising all that is possible to the best advantage. Our sales as yet are not very heavy, as none of our customers except but a few lumps per day. All being engaged opening new claims.

BIRDSEYE CREEK.—G. S. Powers, May 19: We are running steadily, but so far the washing in Nesse and West has been wholly from side ground. We expected to have a blast ready for explosion in the main channel by the 20th inst., but owing to the cemented condition of the gravel we have not been able to get our powder drifts ready, and from the present outlook shall not get them ready before the 27th or 28th of the present month. I shall then make a run of at least 12 days before sending cable message, which will make it some days later than the usual time. We yesterday exploded a blast at Red Dog of 40 kegs, which I am sorry to inform you was almost a total failure, owing to the west rim rock coming in such close contact with the north cross-cut, causing the bank to cleave from the rock, letting the contents of both cross-cuts to escape without taking but very little effect upon the bank. The loss of the powder was not so much as the time it will consume to re-blast the drift, which will have to be done before the ground can be washed.

EXCHEQUER (Gold and Silver).—Lewis Chalmers, May 15: In consequence of my absence at Peavine, on a visit of inspection of the O'Hara furnace, you have no report from me for the week ending May 6. On that day the engine-shaft was down 346 ft., the rock being softer, and therefore more easily worked than during the preceding week. The north drift at the 300 was in 130 ft. from cross-cut. The body of quartz in the face is gradually widening, and shows some fine light ruby, improving again as we drive northward and near the rich schute in the 200. The north drift on the 200 was in 421 ft. from engine-shaft, with no material change. The road to the mine is not yet passable for teams. On the 13th the engine-shaft was down 350 ft. The north drift from the 200 was driven 11 ft. The upraise at the 140 has been timbered, and is again ready for stoping north of winze. The 300 is caving, so I had to stop running until I can get the team up to haul stull timbers. I am well pleased with the O'Hara furnace; I think you can rely on taking out 90 to 95 per cent. out of our high-grade and 50 to 60 per cent. from low-grade ore, at a cost of $3 per ton for roasting, and that your bullion will be over 900 fine. I am now grading for the new building in which the furnace is to be placed.

PESTARENA UNITED.—Produce for May—From Val Toppa, 199 ozs. 0 dwt. 20 grs. of gold, obtained from 375·818 metric tons; average yield, 10 dwts. 14 grs. per ton—Pestarena, 49 ozs. 1 dwt. 4 grs., from 98·666 metric tons; average, 10 dwts. per ton: total produce, 248 ozs. 2 dwts.

SENSBERG (Lead Mining and Smelting).—C. Craze, June 5: Victoria Shaft: After having made every effort possible with the pumps on the mine and failed to drain the shaft, we ordered a new door piece, working barrel, &c., for a 7-in-drawing-lift; these were delivered on the mine on, Saturday May 27, and on Tuesday, the 30th, we completed fixing the same by the side of our 15-inch lift, and I am pleased to say (after pumping four days at the rate of from 18 to 20 strokes per minute) we have been successful in draining the bottom of the shaft, but the water is still very fast, and will require the two pumps going at the rate of 18 strokes per minute to keep it under with the small H. T. pump assisting the plunger. Yesterday the bucket rod of the large pump broke, and while this was being repaired the water rose up again to the 14; I hope, however, if we have no more lets to get to the bottom of the shaft to-morrow, when we shall resume driving the 22 cross cut towards the lode without delay. The 14, west of the shaft, was driven about 7 ft. in the month, the last 4 ft. of which has not been so good, having been disordered by a cross-head; at present the lode is composed of ironstone and gossan, very similar to the lode east in open-cast, where you had some rich deposits of carbonate. We have now set to cross cut it north to ascertain its size, and to see if there is a better part in that direction. The lode in the 14, east of shaft, has also been thrown a little north by a cross head, which is underlying west very fast; I expected to meet with this, having seen the same in the shallow level driven east of the new shaft, where it had a similar effect upon the lode. We have cut north on this about 6 ft., and find an orey lode being carried on with it; the last 6 ft. driven produced 2 tons of good ore, and I have every confidence that we shall have a good lode to the east of this point. Our engine and pitwork, considering the fast rate of working, are doing splendid duty, and are in good order.

LINARES.—May 31: The lode in the 100, driving east of Warne's engine shaft, has declined in value, but is still large and strong, yielding ¾ ton of lead ore per fathom. In the 100 west of this shaft the lode is regular, and worth ½ ton per fathom. The 85, west of Crosby's shaft, is unproductive. Good progress is being made in driving the 105, south of Peill's shaft. The 90, east of Peill's is worth 1½ ton per fathom; and the same level west yields ½ ton per fathom. The 65, west of Peill's, continues unproductive. The lode in the 55, west of Peill's, yields ½ ton per fathom. In the 90, west of San Francisco shaft, the lode is changeable, and is again improving; worth 1 ton per fathom. The 90, east of San Francisco, yields 1½ ton per fathom. The 75 and the 65, east of San Francisco shaft, are worth respectively ½ and 1 ton per fathom. No. 206 winze, below the 65, yields ½ ton; No. 207 winze, below the 75, 1 ton; and No. 208 winze, below the 75, 1 ton per fathom. The weekly raisings of ore were kept up very well during the past month, and the stopes are still producing the usual quantity of mineral. The ordinary works at surface are going on very regularly, and the machinery is in good condition. We estimate the raisings for June at 200 tons.

Quinientos Mine: The ground in the 90 cross-cut, south of Taylor's, is very hard. The 80, east and west of Taylor's engine shaft, and the 65, east of Addis's, are all unproductive. The 55, east of Addis's, is worth 1 ton per fathom; this is holed to the level driving west from Henty's shaft. The 55, west of San Carlos shaft, is communicated with the last-named level. The 65 and 85, west of San Carlos, are both poor. The lode in the 80, east of this shaft, is worth 2 tons per fathom. The 65, east of San Carlos, and the 45, east of Judd's, are both without ore. No lode has yet been met with in the 32 cross-cut north of Judd's. In Addis's shaft, sinking below the 65, the men are doing good labour. Cicero's winze sinking below the 45, and Rica's winze below the 55, are both unproductive. In Caro's winze, below the 45, the lode is larger, and contains stones of ore. Castella's winze, below the 55, is without change. Gallego's winze, below the 32, contains a regular and promising lode, yielding ¼ ton of ore per fathom.

PESTARENA UNITED (Gold).—T. Roberts, June 3: We melted and consigned on the 1st inst. the gold obtained during the month of May—from Val Toppa, 199 ozs. 0 dwts. 20 grs., from 375·818 metric tons of ore, averaging 10 dwts 14 grs. per ton; and from Pestarena 49 ozs. 1 dwt. 4 grs., from 98 6/6 metric tons, averaging 10 dwts. per ton: total production, 248 ozs. 2 dwts. of gold.

ALAMILLOS.—May 31: The lode in the 60, west of San Francisco shaft, is strong and promising, yielding ½ ton of lead ore per fathom. The 50, west of San Felipe, also produces ½ ton per fathom. The 40, west of San Felipe, is opening excellent ore ground, the lode being worth 2½ tons per fathom. The lode in the 50, east of La Magdalena cross-cut, is divided into branches, and diminished in value, now worth 1 ton per fathom. The 50, west of La Magdalena cross-cut, is worth ½ ton per fathom; the lode is good over the slide; the part below it is quite disarranged. The men are getting on well in the 80 cross-cut, north of San Enrique shaft. The 85, west of San Adriano shaft, is passing through a run of ground in which there are several cross-courses. The 50, east of Cox's, shaft, is worth 2 tons per fathom—a long run of rich ore ground has been opened. It has now reached the workings west of Taylor's, and is suspended. The lode in the 60, east of San Victor shaft, is well formed and regular, but contains no ore at present. There is no improvement in the 60, west of San Victor. The 40, east of San Carlos, the 40, east of air shaft, and the 50 fathom level, east of Crosby's, are all unproductive. The 50 and the 60, east of Judd's, each yield ½ ton of ore per fathom. In the 70, north of Judd's, some branches of ore have been met with, but we hope to find something better. There is a valuable lode in the upper level in advance of the 50, east of Judd's cross-cut. The 50, west of Judd's, and the 30, west of Swaffield's, are both poor. The 3½ east of adit shaft, yields ½ ton per fathom. In Taylor's engine-shaft, below the 85, the ground is very hard for sinking. Biggs's shaft, below the 25, is deep enough for a new level, and the men are put to drive east. Santo Tomas shaft, below the 25, is down to a new level, and the men are put to cross cut towards the lode. The men are working well in Abercrombie's shaft, below the 25. Manto's winze and Lozano's winze, both below the 50, are unproductive. The lode in Fecundo's winze, below the 30, is large, with good stones of ore. Sanchez winze, below the 25, produces 1½ ton per fathom. In Marquez winze, below the 20, the lode yields ¾ ton per fathom. The lode in Rega's winze, below the 25, is small, and the ground hard. The usual quantity of ore was returned in the past month, and the stopes are now, on the whole, without any alteration of importance. The works at surface are being kept on very regularly, and the machinery is in good working order. We estimate the raisings for June at 200 tons.

LANESTOSA.—June 1: Asuncion: In the 130 metre level, driving north, the lode has changed to loose calcite, with broken fissures on the western side, carrying stones of calamine. A rise in back of the above level has been put up to prove the extent and value of the fissured ground, and it is now found to be limited and without ore to notice. The 130 metre level, driving south, is in a hard mixed rock of dolomite and sandstone, with no regular appearance of lode. The 100 south has been suspended. In the trial stopes in the 100 south nothing of value has been opened yet, but there remain a few more points to try. The adit level, south of St. Tomas's winze, is passing through iron-stained honeycombed rock, which contains a little calamine, but too much mixed with stone to save.—Glanrafon: In Rica shaft, sinking from surface, bands of flookan continue on footwall, accompanied by broken siliceous rock on the eastern side. Sinking is a good deal impeded by water from heavy rains.—La Berta: In Guillermo shaft, sinking below adit, the dark limestone does not extend over the shaft yet, and the siliceous rock with water renders sinking slow. The ore dressed for May is estimated at 12 tons lead, 10 tons calamine, and 5 tons mixed ore.

FORTUNA.—May 31; Canada Incosa: The lode in the 120, west of O'Shea's shaft, is large and strong. In the 100, west of Judd's, the lode is worth ¾ ton of ore per fathom. The 30, east of San Carlos, and the 40, east and west of Abercrombie's, are unproductive. The 60, west of San Pedro, is worth 1 ton per fathom. The driving of a cross cut at the 70, south of San Pedro, is commenced to intersect the lode which is standing to the south of shaft. The 40, east of San Frederico, yields ¾ ton per fathom. The lode in the 120, east of O'Shea's shaft, is large, but poor. The lode in the 110, east of Addis's, yields 1 ton per fathom. The lode in the 90, east of Addis's, is small and hard. The 80 and 90, west of Kennedy's, are both without ore. The 90, east of Caro's, yields ½ ton per fathom. The 80, east of Caro's, is worth 1½ ton per fathom. Lowndes's engine shaft, sinking below the 90, is now worth ¾ ton per fathom. Abercrombie's shaft, sinking below the 40, is worth ½ ton per fathom. Garcia's winze, below the 50, yields 1 ton per fathom.

Los Silidos: The 120, west of Buenos Amigos shaft, has somewhat improved in value, and now yields ½ ton per fathom. The 110, west of San Carlos, contains strings of lead. The 130, west of Morris's shaft, does not contain ore enough to value. The 130, east of this shaft, is poor. In the 120, east of Morris's, the men have been driving a cross-cut direct south to Cox's shaft. The 110, east of San Pablos shaft, is worth 2 tons of ore per fathom. The 25, west of Swaffield's shaft, is also worth 2 tons, and the 25, east of Swaffield's, yields 3 tons of ore per fathom. The 35 and 45, west of Swaffield's, are both unproductive at present. The 55 and 65, west of Palgrave's engine-shaft, are also poor. The 65, east of Palgrave's is worth 2 tons per fathom, and the 55 east 1 ton per fathom. There is no change in the cross cut north at the 35. The lode in the 25, west of Peill's, contains a little ore. The 25, east of this shaft, yields ½ ton per fathom. In Buenos Amigos engine-shaft, below the 120, the men have been sinking deeper for a fork before commencing to cross cut south. Cox's shaft is down to the required depth for a 120. Savio's winze, below the 100, is worth 1 ton per fathom. Mario's winze, below the 35, yields 2 tons, and Oakes winze, below the 110, produces 1 ton per fathom.

AUSTRALIAN MINES.

PORT PHILLIP AND COLONIAL.—April 17: Quantity of quartz crushed for the four weeks ending March 22, 2756 tons; pyrites treated, 17 tons; total gold obtained, 752 ozs., or an average per ton of 5 dwts 8¼ grs. Receipts, 3109*l.* 11*s.* 9*d.*; payments (including 847*l.* 2*s.* 6*d.* paid for firewood, mine timber, and insurance), 3639*l.* 1*s.* 2*d*: leaving a debit balance of 529*l.* 9*s.* 5*d.*; which, deducted from last month's credit balance of 1509*l.* 7*s.* 6*d.*, left an available balance of 979*l.* 18*s.* 1*d.*, which was carried forward to next month's account. Two weeks' return ending April 5: Quantity of quartz crushed, 1349 tons; total gold obtained, 261 ozs., 8 dwts., or an average per ton of 3 dwts. 22 grs.

— Telegram, dated Galle, June 7: Month ending April 19—Yield per ton, 4 dwts. 6 grs.; western reef, 3 dwts. 9 grs. per ton; new eastern reef, 4 dwts. 13 grs. per ton. Firewood payments, 538*l.* Deficiency, 700*l.*

VICTORIA (LONDON).—South Clunes Mine: During the month ending April 13 2037 tons of quartz were crushed, yielding 900 ozs. 11 dwts. of gold, or an average per ton of 8 dwts. 18 grs. The profit was 1760*l.* 5*s.* The remittance received by the Victoria Company amounts to 300*l.*

SCOTTISH AUSTRALIAN.—The directors have advices from Sydney dated April 15, with reports from the Lambton Colliery to the 14th. The sales of coal for the month of March amounted to 16,544 tons.

YORKE PENINSULA.—The directors have advices from the committee of inspection at Adelaide, dated April 19, with reports from the Kurilla Mine to the 17th. Capt. Anthony writes—Kurilla Lode: At the 25, east of Hall's, and about 10 fms. further east than the 35, I am driving back west of the point, at which I cut into the north part of the lode, where the lode is worth 5 tons of 18 per cent. ore per fathom; driving by four men, at 6*l.* 10*s.* per fathom. At the 35, east of Hall's shaft, the lode has held to 1 ft. in width of solid ore; it has widened within the last few days to nearly 2 ft. solid, and there is no sign of a change for the worse. About 11 fathoms of good lode have now been driven through, leaving the back and the bottom of the drive to be stoped as soon as it will be convenient, when good returns of high quality ore will be made; driving by six men, at 10*l.* per fathom. At the hauling shaft a borer-hole has been made to the 35, and the water let down, so that my anxieties about this point have been completely removed. All well I shall discharge the ore from the 35 through this shaft in less than a month, and thereby save the cost of removing it to Hall's shaft—over 100 fathoms; there is a rich vein of ore 8 in wide in the shaft. During the next three weeks the water will be drained from the 45, and driving east at that depth toward the already discovered ore at the 35 will be resumed.—Tribute Works: The four men working in the 25, east of the hauling shaft, at 6*s.* 8*d.* in 1*l.*, raised last take 40 tons or so of good ore; they are now working at 5*s.* in 1*l.*, and doing well. Six other men are working the old ground at 10*s.* in 1*l.*—Morphett's Lode: The new engine has arrived at Port Wallaroo, and I shall lose no time in getting it erected by the time the shaft is down to the 20, to which I hope to be able to go before fixing the pitwork, for I find that the water is slowly subsiding, finding its way, no doubt, to the Kurilla lode.—Tribute Works: Six men are working at the 10, at an average of 9*s.* 8*d.* in 1*l.*—Anthony's Lode: I have continued driving the 15, west of A shaft, where a very decided improvement has taken place; the lode is not yet self-supporting, but there is a small vein of rich green ore, and the stratum is more congenial. The occurrence of green ore at so great a depth indicates very plainly that it is not likely that we shall find paying deposits until deeper points are touched. Now that the yield of ore is so nearly level with the expenditure a cross-cut should be driven to this lode from the Kurilla lode at the 35, so as to let the water down, which is very troublesome, and at the same time open up what I confidently hope to be good paying ground. I do not anticipate that the cost will exceed 70*l.* The past month, as regards both the opening of good ore ground and the regularity and permanent character of the 25 and 35, east of Hall's, has been the best month since I have known the mine; 76 tons of ore have been sold, realising net 742*l.* 1*s.* 6*d.* There were further 70 tons on hand ready for sale, and 70 tons more being prepared, which together would realise about 1300*l.* more.

ENGLISH AND AUSTRALIAN (Copper).—Port Adelaide, April 21: The stock of coal at Port Adelaide was 3101 tons. There are three smelting and five roasting furnaces and one refinery at work at Port Adelaide, and two smelting and three roasting furnaces, one calciner, and one refinery at work at Newcastle. Since date of last advices 282 tons of copper had been shipped.

AUSTRALIAN CENTRAL.—Capt. Anguin, April 17: I think it advisable to put my report in three divisions:—1. The state of the mine prior to the bursts of of water and sand: The main upper level was extended 270 ft. from No. 2 jump-up, and cross-cuts driven across the gutter varying in length to 130 ft., all in good payable wash-dirt. I was carrying on main drive and putting in cross cuts at the time of the burst. The yield of gold from 18 men actually breaking wash-dirt for the last fortnight was nearly 70 ozs., and it was my intention to have started two more faces (12 men) on wash-dirt, which would have nearly doubled the yield of gold. The wash-dirt is the best I have ever seen in the mine. Had it not been for these bursts, I should be able by this time to be producing dividends.—2. Bursts of water and sand: The first burst took place on March 1; it was a small one, but in a day or two the sand and water increased so much that I was obliged to keep six men in a shift to lift the sand and truck it to the shaft; since then I have breasted up the main drive, and now the only work at the mine is pumping. I am happy to say we are pretty well drained, and in a position to recommence work.—3. The way to work the mine so that the bursts will not stop us from getting gold: The reef drive (bottom level) will have to be extended 300 ft. for another jump-up. If a burst of water and sand occurred we could send it down one jump up, and be getting gold at the other. From the next jump-up the reef drive will always have to be continued for other shafts, the more the better. Our mode of working the mine has been working with only one jump-up, and bottom level always behind the top level, which has been the curse of the mine since the commencement. The position I have been placed in since I have been in charge is to endeavour to get enough gold for the pay-sheet, and always working at a disadvantage. We require more capital to extend the bottom levels at least 1000 ft. The prospects are exceedingly good, and would pay large dividends in a short time with the extension of reef drive. We have a large area to work, and some of it is very rich; it would soon repay the shareholders all the capital laid out, with 50 per cent. interest, in a very short time. I have given a true report of the mine.

ECHOES FROM THE MINING MARKET.

Business, owing to the holidays, has been quiet and restricted for the past fortnight. The effect of the Banca sale was to send down tin 2*l.* per ton, so exactly half of the late advance has already been lost. The public, notwithstanding, appear inclined to invest in the leading tin mines, and prices have, consequently, been fairly supported. Our confidence, however, in any permanent advance in this branch of mining is slight, although the fluctuations that may occur from time to time in the Cornish standards will probably enable holders at low rates to make small profits. But there can be little inducement at present for the public to purchase tin shares with the idea of keeping them for any length of time. The probable future course of the trade is far too uncertain, whilst the advices we are continually receiving from the colonies all express but little hope of any diminution in imports to this country for some time to come. Lead shares are still amongst the best supported securities upon our market, and prices in most cases keep firm. A good demand has existed for Van, Tankerville, Pennerley, West Tankerville, Roman Gravels, Glenroy, Glyn, and some others. In copper shares little has been doing, but Parys Mountain have been in good request. The foreign share market has been quite animated, and advances have taken place in several mines, but more particularly in Richmond, St. John del Rey, and Eberhardt shares. The causes of the advance are noticed below.

There is a promising report from Willoughby Mine. Good progress is being made in the shaft, and all points of operation look well. Since our last remarks on Penstruthal (tin and copper) the shares have advanced considerably, a great many having been purchased for investment. The property is one of great promise for copper.

The following will be found the principal Cornish news:—Carn Brea shares are steady, and in request; price 37 to 39. At South Crofty the new agent is Captain Pascoe, vice Captain Johns, who has gone to Dolcoath. There were ten applicants for the post. At the special meeting when the appointment was made, it was stated that it was taking at the mine as much as 196 lbs. of coal to stamp a ton of tinstuff. The matter is to be seen into. South Carn Brea has made a call of 4*s.* per share—1000*l.* The debit balance was 129*l.* in excess of this amount. West Poldice is said to be opening out very well. West Seton has made a profit of 607*l.* on four months' working, which reduces the balance against the mine to 4580*l.*

The affairs of the old Rosewall Hill and Ransom Company are to be wound up in the Stannaries Court. After crediting the sum realised for the sale of the mine and materials, there remains a sum of 2246*l.* to be provided for. Costs will now swell this amount.

From West Chiverton we hear the ground in the 150 west, going towards the rich ground, has further improved, and is worth 20*l.* per fathom. There is also an improvement in the eastern part of the mine.

In the colliery share market, business has been principally confined to Bilson and Crump, Thorps Gawber, Chapel House, Cardiff and Swansea, and New Sharlston preference. There is no change to notice, however, in quotations.

We have already indicated the foreign mine shares that have met with the most attention. The advance in Richmond was owing to the covering of a large "bear" account, and that in St. John del Rey to the announcement of the dividend of 25 per cent. for the half-year, and that in Eberhardt to better advices, and also to the closing of "bear" operations. The Cape Copper Company have declared the usual dividend of 20*s.* per share, and the Chicago Company announce that they have just received a remittance of 2500*l.*; shares 5¾ to 6¼. The Port Phillip Company has a deficit of 700*l.* for the month ending April 19. Flagstaff shares are weaker, but New Quebrada have advanced to 3⅝, 3⅞. JAMES H. CROFTS.

SALE OF WALLAROO COPPER BY AUCTION.—As will be seen from the announcement in another column, Messrs. James and Shakspeare have been instructed to sell by auction, on June 27, about 1800 tons of Wallaroo copper, comprising about 1535 tons in cakes, and 308 tons in ingots, and no doubt is entertained that if good prices are realised it will do much to settle the market for the remainder of the year. The importer engages that, should the whole of the copper be disposed of at the auction, he will not sell by private contract between the June and September sales, and that the September sale shall not exceed a total of about 2000 tons. Six weeks prompt will be given, the seller paying rent until the prompt day, the buyer afterwards. The copper is to be taken at the landing weights as it lies in warehouse, and is to be paid for in cash, in London, against warrants, less discount 2½ per cent., buyers being also allowed interest at 5 per cent. per annum for any pre payments. Lot money is. per ton, to be paid by all purchasers. It is a condition that if any broker who purchases do not declare his principals within three days, in writing, he will be consider as the principal; and if any purchasers at this sale, or principals who may be afterwards declared, be not satisfactorily known to the selling brokers, they are to be at liberty to call immediately on the purchasing broker or bidder at this sale for such deposits as they may deem necessary, and in default thereof the copper to be re-sold forthwith, the loss, if any, being made good by the defaulter; and all brokers who shall buy for persons residing in the country or abroad shall, in case they declare their principals, produce their authority for the same, together with an undertaking from some responsible party resident in London to make good the contract.

CARBURETTERS.—Mr. G. GRUNDY, of Chapel-lane, near Tunstall, (for John R. Allen, of Chicago), has patented an invention which relates to certain improvements in apparatus for carburetting air or gas for the purpose of illumination and heating, its object being to thoroughly and uniformly charge the air or gas with the vapour of the hydrocarbon liquids—such, for example, as naptha, benzine, and the like—in such a manner as to produce when burnt a brilliant and steady flame. The invention consists of an open-mouthed vessel formed of two concentric cylinders united to a common bottom, and so arranged that an annular space is left between the two for containing water, in which annular space an ordinary gas-holder is set. The inner cylinder, which forms the carburetting chamber, is constructed with a flaring mouth, the object of which is to prevent any hydrocarbon fluid from being carried over into the annular chamber between the two cylinders, and thus to avoid waste. Near the bottom of the inner chamber there is arranged a distributing box having discharge-pipes, with an elbow or bend deflecting the air on the bottom of the carburetter in opposite directions, and making a thorough agitation of the hydrocarbon fluid.

*** With this week's Journal a SUPPLEMENTAL SHEET is given, which contains—Original Correspondence: Loan Collection of Scientific Apparatus; Science at South Kensington; Monetary and Silver Question in America (J. Berton); Mining in the East, No. IV.; Sweetland Creek Gold Mines; New Sulphuret Concentrator; Blakely Hall Collieries; Boring Machines for Mining (G. Rickard); Explosives—Dynamite—Gunpowder; New Powerful Explosive; Transport and Storage of Explosives; Perilous Adventure (C. Colwell); Tin-Plate Trade; Copper Standard; Dues—Cornish and Crown; Lead Mining (J. J. Reynolds); Deposits of Copper at Nantlle Vale (J. Roberts); Unexplored Mining Ground of Cornwall.—The Wild Duck, or Sportsmans' Arms, Meeting—Dartmoor United China-clay Works—Channel Tunnel—Patent Matters, &c.—Meetings of the York Peninsula, Cesena Sulphur, Central Foxdale, South Condurrow, Wicklow Copper, East Chiverton, and West Wheal Seton Companies.

The Mining Market: Prices of Metals, Ores, &c.

METAL MARKET—LONDON, JUNE 9, 1876.

IRON.	£ s. d.	£ s. d.
Pig, GMB, f.o.b., Clyde..	2 17 3-	—
,, Scotch, all No. 1 ...	2 18 0-	3 8 0
Bars, Welsh, f.o.b. Wales	6 2 6-	6 5 0
,, ,, in London.	6 15 0-	7 0 0
,, Stafford., ,, .	8 0 0-	9 15 0
,, in Tyne or Tees ...	6 10 0-	—
,, Swedish, London ..	12 0 0-12	10 0
Rails, Welsh, at works..	5 15 0-	6 0 0
Railway chairs	— -	—
,, spikes	— -	—
Sheets, Staff., in London	10 10 0-	—
Plates, Staff., in London	10 0 0-12	0 0
Hoops, Staff.	8 15 0-10	0 0
Nail rods, Staff. in Lon.	7 15 0-	8 2 6
STEEL.		
English, spring	14 0 0-23	0 0
,, cast	25 0 0-45	0 0
Swedish, keg.....	18 0 0-	—
,, fag. ham.	19 0 0-	—
LEAD.		
English, pig, common .	21 5 0-21	10 0
,, ,, L.B.	21 10 0-	—
,, ,, W.B.	22 10 0-	—
,, sheet and bar..	22 0 0-22	10 0
,, pipe.....	23 0 0-	—
,, red	24 0 0-24	10 0
,, white	28 0 0-29	10 0
,, patent shot ...25	10 0-	—
Spanish.....	20 15 0-20	17 6
QUICKSILVER.		
Flasks of 75 lbs., ware.	9 0 0-	—
SPELTER.		
Silesian or Rhenish ..	23 10 0-	23 15 0
English, Swansea	23 10 0-	23 15 0
Sheet zinc	28 0 0-	28 10 0

TIN.	£ s. d.	£ s. d.
English, ingot, f.o.b...	79 0 0-	—
,, bars ,, ...	80 0 0-	—
,, refined.....	81 0 0-	—
Australian	74 0 0-	—
Banca	77 0 0-	(nom.)
Straits	74 0 0-	—
COPPER.		
Tough cake and ingot.	83 0 0-	84 0 0
Best selected	84 0 0-	85 0 0
Sheets and sheathing.	88 0 0-	—
Fat Bottoms	92 0 0-	—
Wallaroo	82 10 0-	—
Burra, or P.C.C.	82 0 0-	—
Other brands	80 0 0-	81 0 0
Chili bars, g.o.b.....	77 0 0-	77 10 0
PHOSPHOR BRONZE.		
Bearing metal	£112	0 0
Other alloys	£120 0 0-	140 0 0
BRASS.		
Wire	8¾d.-	—
Tubes.....	9	-12d.
Sheets	9	-10
Yel. met. sheath. & sheets.	7⅜	- 8
Nails composition.....	9	-10½
TIN-PLATES.*	per box.	
Charcoal, 1st quality ...	1 5 0-	1 6 0
,, 2nd quality ...	1 2 0-	1 4 0
Coke, 1st quality	1 0 0-	1 1 0
,, 2nd quality	0 18 6-	1 0 0
Black .....per ton	17 0 0-	17 10 0
Canada, Staff. or Gla., at Liverpool	13 0 0-	13 10 0
Black Taggers, 450 of 14 × 10	30 0 0-	—

* At the works, 1s. to 1s. 6d. per box less for ordinary; 10s. per ton less for Canada; IX 6s. per box more than IC quoted above, and add 6s. for each X. Terne-plates 2s. per box below tin-plates of similar brands.

REMARKS.—Our markets have presented no new feature this week, and the recurrence of the Whitsuntide holidays has tended to curtail still more an already very restricted business, and prices generally are, as a consequence, somewhat easier, and, owing to this continued restriction, the tendency towards lower prices becomes week by week more marked, and it would seem that this will and must be so unless a very unexpected change for the better in the trade of the country, of which there are no present indications, should occur, or unless certain bold speculators should enter the market, and attempt to arrest the downward progress by operating for the rise, a movement which is not at all likely, and, were it to take place, would assuredly prove a signal failure in the long run, although for the moment it is quite possible to effect a fictitious advance, to be succeeded in all probability by a fall to a point below that from which the advance commenced. Those likely to enter upon such an operation are few now in comparison with former years. Experience in the past has taught many a salutary lesson, and the public are, happily, slower than they were in following a lead which must of necessity ultimately end in disaster. Speculation at the present time would, from a variety of causes, be more than usually inopportune, more particularly upon the grounds o the suspense which overhangs the question of peace or war, it being utterly impossible to say just now who may become embroiled, and what the effect upon the commerce of this and other countries would be. But even upon the supposition that peace will be maintained—a supposition for which, however, the grounds are small—and plans for the future be laid upon this basis, what hope, in the face of the utter lack of confidence which exists, in the face of falling exchanges and foreign markets devoid of animation, would there be of operating with any probability of success? Unsatisfactory though the conclusion may be, yet without question the wisest course just now is to follow in the track of the great majority of business men in the City of London, and do nothing at all, or as little as possible, waiting still patiently for the dawn of brighter days.

COPPER.—The market opened very quiet at the commencement of the week. Chili bars, g.o.b., being quoted 77*l.* to 77*l.* 10s., ordinary cash terms. The charters from Chili during the last fortnight in May having been announced to be only 1100 tons of bars, of which 1050 were for this country, and 50 tons for the Continent, the market assumed a firmer appearance, and all descriptions of copper were steadily held at current quotations, but buyers not being willing to launch out upon the favourable announcement of small charters, actual business was very limited. Up to Thursday last this continued to be the condition of the market, but upon that day the firmness which had characterised sellers, gave way, and efforts were made to quit holdings in Chili bars and Australian copper. The announcement of a further sale of 1800 tons of Wallaroo copper on the 27th inst. by public auction tended rather to depress the market, as it is surmised that the whole of the last sale has not yet found its way into consumption, and to-day's market is very quiet indeed. Chili bars g.o.b. being quoted 77*l.* to 77*l.* 10s.; English tough, 83*l.* to 84*l.*; best selected, 84*l.* to 85*l.*; strong sheets, 89*l.* to 90*l.*; India, 4 by 4, 89*l.*; Australian copper, 82*l.* 10s.

IRON.—Look in what direction you may each of the great iron producing centers of this country seems to vie with each other in presenting a most deplorable condition of stagnation. Instead of a healthy competition between district and district, firm and firm, each seems to be eyeing the other with the consciousness that when one breaks down the output will be by so much reduced, and the probabilities of the remainder surviving be in just this proportion increased. There can be no question but that many of the firms now at work are working to a loss, and if it be asked why, under these circumstances, do they continue to work, the reply is that they still cling to the hope that in the eventualities of the future the wheel of fortune may present a more favourable aspect than that which is the case at present. Some argue that it is simply impossible that things can be much worse, and consequently that the probabilities are every day greater that they will improve. Doubtless the present very unsettled condition of affairs in Turkey, involving the gravest contingencies, tends to check any improvement in this trade which might possibly have developed under more favourable auspices; and perhaps they who are able to keep their hands together and their works in operation are showing far sighted wisdom, and that the end will justify their conclusions. Certainly, to the disinterested on-looker who takes simply a calm, dispassionate, philosophical view of the case, nothing seems much more dreary than the present aspect of affairs, unless, perchance, it be the future prospects.

As day after day passes without a shadow of improvement, and mines are being worked, and blast furnaces belch forth fire and smoke, the consequence is that stocks are increasing, and the difficulty of sustaining the market becomes still greater. Should war break out, whether England be involved in it or not, the trade of the country would probably be materially affected, and a deadly dull spring time might in this case be succeeded by a summer yet more deadly dull. The demand for founders' iron in the North for local requirements and for shipments shows a slight improvement; while, on the other hand, owing to so many of the works being closed the demand for forge iron has fallen off. The shipments of pig iron coastwise continue. There is nothing doing in rails, and the enquiry for ship-plates is not so good as it has been, but up to the present the works employed upon this department have been fairly supplied with contracts. The quotations for pig iron are—*No.* 1, 50s.; *No.* 3, 45s.; *No.* 4 *forge*, 44s.

The report from South Wales is as discouraging as ever, and the state of affairs bears out the assertion made at the Conference of the National Union of Miners at Manchester last week, that the trade has never been so bad as it now is for 20 years. There are some who buoy themselves up with the hope that so soon as contracts which in ordinary times would have fallen to the lot of South Wales to execute, but which in consequence of the disturbed state of the district have been given out elsewhere, shall have been fulfilled, the trade will revert to the original groove, and the Welsh ironmasters will once more have the refusal of such work. It may be so, but there is another side to the question. Suppose that the work be equally well executed by those who have it now in hand, the buyers may argue that future contracts should be placed in the same quarters, and not be given out in districts where such depression has prevailed, and where so little reliance can be placed upon punctuality in delivery, owing to strikes and other causes.

What little is now doing in South Wales is chiefly for Sweden and the colonies, but fresh contracts, to take the place of the old ones as they are worked off, come in very slowly. The enquiry for pigs is limited, and there is next to nothing doing in the various descriptions of finished iron. The steelworks in the district sympathise with the ironworks in regard to dulness. The market for Scotch pigs opened at the closing price of last week, and in the early part of the week showed a declining tendency; but on Thursday there was a recovery to former quotations, and to-day the market closes at last week's quotations. Buyers, 57s. 6d.; sellers, 57s. 9d.

SHIPMENTS.

Week ending June 3, 1876	Tons 11,019
Week ending June 5, 1875	8,708
Increase	2,311
Total decrease for 1876	33,015

LEAD.—The market continues to be very flat; and good soft English pig is obtainable at 21*l.* 5s., and soft Spanish, without silver, 20*l.* 15s.

SPELTER.—The demand for Silesian is sufficient to support the market, which is steady at 23*l.* 10s.; and English hard spelter rules about 18*l.*

ZINC.—During the week 120 tons of London rolled was offered at public auction, of which 80 tons found buyers at 27*l.* 10s., or a reduction of 10s. upon the previous sale.

QUICKSILVER.—The market continues quiet, and 9*l.* has been accepted to-day.

TIN.—This metal has been quiet during the week. The speculative feeling which was apparent some little time ago has completely subsided, and is not likely to be renewed—the fallacy of attempting to raise the value of a metal which is encumbered with a burdensome stock in days of such general stagnation as the present having been proved. Straits tin has been offered to-day, both on the spot and for arrival, at 74*l.*, but without finding buyers—the probability is that in the absence of speculation lower prices will shortly ensue.

TIN-PLATES.—There is no improvement to record. The demand is still very sluggish; and, although the make is restricted as much as possible, stocks are on the increase, and prices decline, IC coke plates are quoted 18s. to 19s. per box.

THE IRON TRADE.—(Griffiths's Weekly Report).—Friday Evening.—The Glasgow market for g.m.b. pig-iron has been steady during the week, closing this evening at 57s. 6d., about 3d. less than the price this day week. We quote makers' No. 1 iron:—Gartsherrie, 65s.; Coltness, 69s.; Calder, 67s.; Langloan, 67s. 6d.; Summerlee, 62s. 6d., f.o.b. Glasgow; Glengarnock, 63s. 6d.; Eglinton, 57s. 6d., f.o.b. Ardrossan; Shotts, 68s., f.o.b. Leith; Kenniel, 59s. 6d., f.o.b. Bo'ness. Our market this week for all kinds of iron is quiet. There is an increased demand for sheet iron, and orders are constantly given out for best York shire and Staffordshire bars; perhaps there is a little more doing in the latter kind at full list rates—9*l.* per ton, the Earl of Dudley's 12s. 6d. more. The demand for boiler plates is not so brisk as it was a month since, either in the best or commoner qualities. The shipping demand for nail rods is remarkably quiet for the season of the year. Indeed, all kinds of iron, except sheets, are flat on this market, and hoops may be included in this category.

Tin-plates are no better, but we have the greatest confidence in stating that this market will improve. Our advices from New York agree with our own views, that prices have touched the lowest point, and we believe some large purchases will be made before quarter-day. We advise our friends not to sell their plates at present prices. This market must improve, for prices are now at the lowest. The meeting at the Barrow Exchange, on Monday, was inanimate, but makers did not press pig-iron. At Middlesborough, on Tuesday, everything was flat, and prices drooping. Manufacturers complained much of prices, and, indeed, a want of orders. Numerous mills will be closed here. Although the market was weak, the Middlesborough smelters held their iron firmly. Some merchants pressingly offered second-hand parcels. The Glasgow market has been quiet all the week, with no appreciable change in price. The Birmingham market yesterday was cheerful, and, as a whole, the Black Country trade is a shade better. The makers of sheet iron have more to do, most of the mills being now occupied.

An eminent Wolverhampton manufacturer has within the last week given out orders for 1500 tons of sheets, and some good orders for galvanising sheet-iron have been sent down from this market. The prospects of this department of the trade in the Black Country have no doubt improved. Boiler plates are not so brisk here. The same may be said of nail rods. The manufactures in Shropshire have a little more to do, but the smelters are increasing the stocks. The annual meeting of the Wellington Iron Company takes place next Saturday; the balance-sheet, like numerous others, will show no profit.

With regard to the general state of the iron trade it is, without doubt, very trying to the masters, but this is not the first time the trade has been depressed, nor are things worse now than we have often seen them; on the contrary, we have frequently witnessed a worse state of things than is now manifest. However, when prices of wages have been reduced to a low standard we shall be able to make iron cheaper, and again secure the orders of our old markets. We are gradually arriving at this state of things, but are unable for the present to discover sure and certain evidences that we are arrived at the bottom.

Messrs. W. T. SARGANT and SON—TIN is beginning to attract attention, and much business has been done. Reports from the Straits and Australia by each successive incoming mail speak more and more positively as to a diminished production in those places, and the prices which have produced that effect are higher ones than now ruling. A moderate rise in the value here would not, therefore, defeat speculators by increasing the production again, and the article being so cheap seems, therefore, under such circumstances to offer a fair opportunity for a warrantable speculation. The depressed state of the tin-plate trade is an element against a rise in prices, but only to a certain extent, because that depression is more due to excessive competition amongst the makers themselves than to any inherent badness in the trade demand. Certainly any lessened demand from the tin-plate makers has at present been counterbalanced by an increased demand for other purposes, as the total deliveries for the first five months of this year are 300 tons, in excess of the deliveries for same period last year. As tending to confirm the reports of a diminished production of tin, we may point out that the importations into London for the first five months of this year have been 7491 tons, against 8494 tons same time last year, and the quantities remaining afloat are also less. The arrivals of Straits have amounted to 450 tons, and the shipments from the Straits during May are estimated at about 250 tons. The demand has been good, and as already mentioned partly for speculation. The price advanced during the latter part of May to 77*l.*, but subsequently receded to 73*l.* 10s., when an improved enquiry again set in, and the market closes firmly at 74*l.* 10s. to 75*l.* Importers have been very unwilling sellers owing to the scarc ty of tin in the Straits, and the difficulty of communicating with the East, as the cables have been out of order more or less for a considerable time. The foreign—Dutch, East Indian, and Australian—tin in warehouse, London and Holland, and afloat for both, and the price per ton of Straits, cash, were—

	Total tons.	Price.
April 29, 1876	14,389	£ 72 0 0
May 31, 1876.....	13,836	73 10 0
May 31, 1875.....	13,744	83 0 0
May 31, 1874	10,095	109 0 0
May 31, 1873	—	134 10 0

Referring to the same subject the *West Briton* writes—"We have ourselves received information from Queensland that the miners are leaving the tin workings by hundreds, the present low prices of tin not being remunerative; and a correspondent of the *Mining Journal*, writing from Brisbane, March 30, states that there had been a rush to new gold fields, that the tin grounds would be much affected, and that the news also of a further fall in the London market, on March 28, would have the effect of reducing production from 40 to 50 per cent. This result is confirming the opinion we have often expressed, that tin ore cannot continue to be produced in large quantities in any part of the world at the low prices that have ruled for some time past. There is evidently at the present time an opportunity for speculation in the metal.

Messrs. SANFORD and BIRD.—COPPER: The charters from Chili for the last fortnight in May are announced as 1100 tons bars. The market remains steady at 77*l.* 10s. for good ordinary brands. Australian is quiet. The next sale of Wallaroo will take place on the 27th inst., and consist of 1800 tons. Tin closes steady at 74*l.* for both Straits and Australian, with but little offering. English is firm. In tin-plates prices keep low, and there is no sign of any improvement in the demand. Lead continues quiet and unchanged. Sheet zinc is steady, with little doing. Quicksilver is obtainable in quantity at 9*l.* Antimony is dull at 64*l.* to 65*l.* for French Star regulus.

Messrs. HENRY ROGERS, SONS, and CO.—In the metal market the same state of depression continues, and without any apparent prospect of a change at present. Holders of raw material are, however, indisposed to realise, believing in an improvement sooner or later; and from this cause prices are well maintained, considering that daily transactions are restricted to the barest wants. Exports of all descriptions throughout May show a very considerable reduction, but the average of the five months are not so unfavourable as had been anticipated.

Messrs. FRY, JAMES, and CO.—COPPER having continued very slow of sale has receded in value all round by from 10s. to 20s. per ton. Nothing done in ores or regulus, except at the public ticketings, for a fortnight past.——TIN has again shown some fluctuations, but the tendency, on the whole, has been to a relapse from the late rally—the fall from the highest has been 2*l.* per ton.——SPELTER has been in fair demand.——LEAD continues dull, with prices again slightly in favour of buyers.——TIN-PLATES are without recovery.

Messrs. GRENFELL and RICKARDS—COPPER manifesting increasing dulness, and prices of all kinds are gradually drooping. The short charters for the last fortnight in May (1100 tons) have not helped matters. Australian is especially dull in the face of the approaching sale of 1800 tons Wallaroo, on the 27th inst. Manufactured is also obtainable on easier terms. Unless some unforeseen demand arises, there is nothing to prevent a further fall, especially in Chili bars, which are proportionately higher than other descriptions of copper. Ores and regulus are, however, still held firmly by importers.——TIN has had a sharp advance during the past month, Straits and Australian ruling for some days at 78*l.* 10s. per ton, which price brought out plenty of sellers. It is believed by many that the effect of the long drought in Australia is yet to be felt, and that we shall not this year receive anything like the quantity of tin from this quarter that came last year. Should this anticipation prove correct there are certainly grounds for holding for higher prices; otherwise we fail to see that consumption has yet overtaken production.——TIN-PLATES very depressed, and prices lower than ever previously known.——LEAD quiet, at 21*l.* 5s. for good shipping brands.

Messrs. PIXLEY and ABELL.—GOLD: There is no demand for export and all arrivals are taken to the Bank; the amount thus disposed of since the 1st inst. being 246,000*l.* We have received during the week 140,000*l.* from New York, 8720*l.* from the Brazils, 5300*l.* from West Indies, 23,410*l.* from Bombay, 13,000*l.* from New Zealand=189,430*l.* The Nile has taken 7000*l.* to Trinidad, and the P. and O. steamer 25,000*l.* to Malta.——SILVER remained firm at 52*d.* per oz. until yesterday, when a decline took place on the reduction of the rate for the council drafts becoming known to 51 3/4*d.* per oz. A considerable business has been done for the steamer leaving to-day for Bombay, that vessel taking 280,400*l.* The imports during the week comprise 210,000*l.* from Germany, and about 27,000*l.* from New York.

Mr. MURRANT—TIN: In foreign great interest was evinced in the action of the Dutch Trading Company, who, at their sale of about 950 tons Banca, on the 31st ult., reduced their limit from 50 fl. to 45 fl. The fact that the stuff only averaged ½ fl. over the reserve price is sufficient to prove that the company showed a wise appreciation of what the market value really was. The impression produced on this market was considerable, and Straits, which had been worked up to 78s. 6d., went to 73s. 6d., but has since recovered to about 74s., at which price, however, there are at the moment of writing considerable quantities offering, both on spot and forward. The belief is that, if present prices are to be maintained, fresh speculators must be found, or the present operators for a rise will have to considerably increase their holdings, as we have now on the spot over six months' supply for both England and the Continent. Meanwhile large numbers of tin plate works are being stopped, and, in consequence, the consumption of the article decreases.——COPPER: In Chili quotations have shown a gradually weakening tendency in spite of small charters, and the price has slipped from 79*l.* to 77*l.* 10s., without causing any impetus to business, the latter being the selling price last night. Australian has fallen rather more. Wallaroo (say) from 84*l.* 10s. to 82*l.*, at which business resulted to-day, ex next sale. It would be very difficult to account for the depression now existing in this article, the position being in no way altered for the worse from that of a few months since. The feeling, however, seems to gain ground that a lower range of prices must shortly ensue.——The IRON and TIN-PLATE trades continue in the same unsatisfactory condition.——OTHER METALS no change.

Very little change has taken place in the MINING SHARE MARKET since our last, and prices remain about the same.

The mines chiefly dealt in have been Roman Gravels, Tankerville, Glenroy, Rookhope, Parys Mountain, North Laxey, San Pedro, Pennerley, Old Treburgett, Penstruthal, Pateley Bridge, Wheal Crebor, Glyn, Great Laxey, Van, Van Consols, West Tankerville, Carn Brea, and a few others.

Roman Gravels have been firmer at 15 to 15¼. No change in this mine, which has sampled 200 tons of lead ore for the month. Tankerville, 10⅛ to 11; the lode in the bottom end is 15 ft. wide, and worth 14 tons of lead ore per fathom. Stopes also looking well. West Tankerville, 1⅞ to 2⅛; the 75 south is improving. Other places about the same. The ore sold—25 tons—for 366*l.* 5s. Ladywell, 1⅜ to 1½; the 20 tons of lead ore sold for 260*l.* Pennerley, 2 to 2¼. Great Laxey, 17 to 17½. North Laxey, 18s. to 21s.; the bottom level is improving for lead. Glenroys have been largely dealt in at 7 to 8; the lode in the sump referred to last week is reported worth 3 tons of lead ore and 4 tons of blende per fathom. Rookhope, 19s. to 21s. Pateley Bridge, 3⅛ to 4; Assheton, 1⅛ to 1⅜; West Assheton, 1⅛ to 2⅛; Van, 36 to 38; East Van, 9½ to 10; Van Consols, 1⅛ to 2⅛; Glyn, 2⅛ to 3⅛; Pennant, 5 to 5⅛; St. Patrick, 25s. to 30s.

Wheal Basset shares have advanced to 15, 20, owing to an improvement in the new lode cut from Denis's shaft, which is now producing rich stones of copper. The 60 and 70 cross-cuts are approaching another new lode driving north. Although of late years the mine has been selling large quantities of tin, it was formerly very rich for copper, and paid 43*l.* per share, or 220,672*l.* in dividends. Carn Brea, 36 to 38; Dolcoath, 35 to 37; Tincroft, 18 to 19; East Carndon, 1⅜ to 1⅝. South Condurrow, 4 to 4¼; at the meeting (particulars of which will be found in another column) the accounts showed a profit on the four months' working of 1233*l.*, and a balance in favour of the mine of 2102*l.*, and a dividend of 3s. 6d. per share was made. The costs were charged up to June 10, and the aggregate value of points in operation 130*l.* The mine, it will be seen, is looking well. Marke Valley, 2 to 2¼; Prince of Wales, 2s. 6d. to 5s.

Parys Mountain have been largely dealt in at 18s. to 20s., buyers anticipating an early discovery in the 90 cross-cut, which the agent says this week looks exceedingly promising, with a further increase of water issuing from the middle of the forebreast. The 45 east looks well, and shows the ore ground is lengthening in that direction. Penstruthal have been in request, and leave off at 15s. to 17s. 6d.; the prospects for copper, we understand, are very good, although the present company started for tin. The mine was formerly very rich for copper, and may be so again in its present points of operation. Wheal Agar, 2⅛ to 3; we understand this mine looks very promising. Devon Great Consols, 3 to 3⅛; the mine continues to look well. The lode in the 145 east is 5 ft. wide, a good course of copper ore, worth 10 tons per fathom. The lode in Maunder's winze, sinking below the 115 level, is also worth 10 tons of copper ore per fathom. Wheal Grenville, 20s. to 25s.; the accounts for the meeting show a debit balance of 1090*l.*; the loss on the last quarter is about 800*l.*

Old Treburgett, 8s. to 10s.; this mine is looking well, and sold this week 33 tons of silver-lead ore for 26*l.* 5s. 6d. per ton. The 80 end south is worth 13*l.* per fathom. In a winze sinking from the 70 to the 80, and 25 fms. in advance of the end, the lode is worth 55*l.* per fathom; this looks well for a long and rich course of ore in the 80. South Roman Gravels, 20s. to 25s.; Wheal Crebor, 2 to 2⅛. Relistian Consols, ⅝ to ¾; the lode in the shaft is large, with good stones of copper ore, tin, and blende. South Carn Brea, 1¼ to 1½; at the meeting a call of 4s. per share was made. The debit balance against the mine was 1592*l.* 7s. 5d. The returns for the three months were—copper ore, 235*l.*; tin, 245*l.* West Seton, 25 to 30; the accounts at the meeting show a profit on the four months' working of 607*l.* The balance against the mine is 4580*l.* West Frances, 7 to 8; Wheal Kitty (St. Agnes), 2 to 2½; South France, 1 to 1½; Grogwinion, 5 to 6; Cook's Kitchen, 5 to 6. West Chiverton, 17 to 18; the lode in the 150, west of Batter's shaft, maintains its value—20*l.* per fm., and a further improvement is expected. The lode in the 140, at Hawke's shaft, is worth fully 20*l.* per fathom. These points in the bottom of the mine are important. Cathedral, new issue, 32s. 6d. to 37s. 6d.

Cape Copper, 39 to 41; the directors have declared a dividend of 1*l.* per share, free of income tax. St. John del Rey, 340 to 360; the dividend here will, it is said, be 25 per cent. for the half-year. The advices just received show a produce for 11 days, being the second division for May, of 600*l.* Richmond shares have advanced to 8¾, 9. The week's run is telegraphed at $40,000. Chontales, ⅜ to ½; Eberhardt and Aurora, 8¾ to 9¼; Emma, 15s. to 20s.; Javali, 7s. to 8s.; New Quebrada, 3¾ to 4; San Pedro, 1½ to 2; Sweetland Creek, 15s. to 20s.; Santa Barbara, 1½ to 1¾. Frontino and Bolivia, 2 to 2½; the directors' report for the meeting, to be held on the 13th, shows the net profits for the year ending Dec. 31 last amounted to the sum of 10,871*l.* 7s. 5d. Of this they propose to transfer 3738*l.* 15s. 5d. to capital account, and out of the profit for the last six months, to Dec. 31 (4177*l.* 19s. 2d.), they propose to divide 2750*l.*, or 1s. per share. Condes of Chili, 6 to 6½; a second shipment of 150 tons of silver-lead ore has arrived at Liverpool this week. Argentine, 6 to 6½; advices have been received from the mines that large quantities of rich ores were being raised from the Piqué Mine.

The Market for Mine Shares on the Stock Exchange during the week has been steady, with a very fair amount of business transacted; indeed, prices have not exhibited the fluctuations observable in other makets, but, on the whole, have a rising tendency. Metals have not varied in quotations, but show firmness at last week's prices.

Richmond shares have advanced to 8¾, 9, and the telegram received says—"Week's run $40,000." The refinery return for the week is stated to $30,000. Another telegram received on Wednesday say—"Struck ore in the 800 ft. drift, cannot say whether main lode, but 9 ft. thick." The drift referred to was started from the main hoisting shaft in the 800 ft. level in a direction to intersect the main lode, according to its general bearing, in the 700 ft. level, to which point it had been followed down by winzes; the probabilities, therefore, are in favour of the ore body just struck being the main lode, and if so another 100 ft. in depth is added to the reserves; but whether the main lode or a bed vein, it is satisfactory to find the ore coming in so soon in the vicinity of the main shaft. The "Sentinel" of May 18 reports heavy falls of snow at Eureka, winter weather there, as here, usurping the place of spring. The manager's usual weekly report has not arrived. Eberhardt and Aurora, 8¼ to 8⅝; the produce for the month ending June 6 was 22,000*l.*; no new development is referred to.

Exchequer, 1⅞ to 2⅛; advices continue favourable; the manager was grading the ground in order to erect O'Hara's furnace, having been well satisfied with his inspection of it at Peavine, where it is in operation, and he states that the roasting can be done by it at $3 per ton. I.X.L., 1⅛ to 1⅛; the manager has notified the directors that he was getting in supplies, and would recommence operations on the lower levels at once, and in a few days would be able to inform them as to the purchase of the mill to work the company's ores.

The Market for Hydraulic or Goldwashing shares has been slightly depressed, caused apparently by the annual report of the Sweetland Creek Company, to which we refer more fully below. These shares have for the moment been pressed for sale, and close ⅝ to 1, the lowest price at which they have ever been. Birdseye Creek are quoted nominally a shade lower, but we note very few transactions in the shares. Blue Tent have not participated in the reduction, but maintain their firmness, with a tendency to improve. Cedar Creek have been more enquired for, and close at an advance on last week's prices. Oregon preference, unchanged.

Sweetland Creek, ½ to 1; the report of the directors, with the accounts, has been issued in anticipation of the annual meeting to be

held on the 20th inst. The agent considers that with present facilities for washing the pay-ground can be exhausted in from 12 to 18 months, leaving a margin of side-dirt which may eventually became of value if cheaper water can be obtained. The fact of the gravel belonging to this company becoming exhausted cannot but be considered as discouraging; it must, however, be borne in mind that five years ago Mr. McLean considered that the pay-channel would be washed away in five or six years, leaving 10 to 15 years' work on side-dirt; his present report does not give an opinion as to the length of time the "margin of side-dirt" will now last, though if cheaper water can be obtained it would seem to show that some length of time must elapse before the gravel is entirely washed off; while, again, the value of this side dirt must remain an open question until washing is fairly tried.

Birdseye Creek, 1 to 1½: there has been some delay in getting the blast ready for explosion in the main channel, owing to the cemented condition of the gravel preventing the completion of the powder drifts; they will probably not be ready before the end of the month. The blast of 40 kegs at Red Dog brought down but little burden, so that the drift will have to be re-blasted before the ground can be washed. Cedar Creek, ⅝ to ¾; in the Badger claim there has been a cave in of a high bank of fine gravel; fortunately they had covered the shaft, or it would have been filled. They had to suspend tunnelling, but the pit is now clear, and they are washing to good advantage. The Little Pin Top claim has not proved rich, but has paid for water. The April cost-sheet has not been forwarded, as the mint certificate had not been received. The ditches are conveying full quantity of water. The prospects for the remainder of the season are considered encouraging. Blue Tent, 3⅛ to 3¼; the washing at Enterprise claim has been recommenced, though the increased pressure has done slight damage to the pipes, which, however, are now in good order again. There is plenty of water in the South Yuba river, and as the ditch is now free the greater volume of water can be advantageously used on the various claims.

Argentine, 6 to 6½; advices to April 25 were received yesterday (Friday) from the commissioner in charge that rapid progress was being made in the erection of and repairs to the machinery, and that they were working in the Piqué Mine, and breaking and raising large quantities of ore, since which date a telegram has been received that 12 heads of stamps were started working about 14 days ago on Piqué ore, and that the remainder of the machinery had arrived and was *in transitu* to the mines. Condes of Chili, 6 to 6½; advices have been received to April 25 from the manager in charge, and also from Mr. Seccombe, who had arrived out. The advices are satisfactory, and very valuable discoveries had, it is reported, been made at the mines. Since this Mr. Seccombe has made an exhaustive inspection of the property, and his report may be expected by the next Pacific mail, 14 days hence. The second shipment, of 150 tons, by the Ilimani steamer, arrived at Liverpool on Thursday last. The first shipment will be sampled next week, for sale on the 27th inst. Everything is considered to be progressing satisfactorily. Almada and Tirito, ⅛ to ⅜; a telegram received on Tuesday says—"Lode west of cross-cut 3 ft. wide; ore, black coppery, and looking well. Ore vein, tunnel end, promising. Mina Grande lode poor in 12 fm. level.

In British mine shares there is no change to report and very little business doing. Van, 36 to 38; the driving of the 105 level by the side of the lode is steadily progressing. They have just put in a few trial holes a few feet back from the end, and have cut a splendid course of ore. No other alteration, either underground or at surface, since last report. East Van, 9½ to 10; 22 ft. have been driven south and 18 ft. north in the cross-cuts. The shaft is down 32 fms. In another week Capt. Williams expects important results. Great West Van, 10s. to 12s. 6d.; a good branch of the lode ahead has been met with in the 46 north cross-cut. Van Consols, 1¾ to 2¼ Glyn, 2⅝ to 3⅛; every effort is being made to reach the lode during this month. Pennerley, 2⅛ to 2⅜; there is no reported alteration in the various parts of the mine, which, upon the whole, may be said to be decidedly better. The annual meetiug has been fixed for the 21st inst., and we are informed that the accounts will be issued early in the coming week. The usual quantity of lead will be sampled on Tuesday—80 tons. Llanidloes, 3 to 3½; at this mine 20 tons of lead sampled this week.

Pateley Bridge, 4 to 4½; the Lumb vein going east in the south cross-cut at the 10 is rapidly improving, with every appearance of opening out into a very productive lode in a few yards driving, now worth 13*l*. per fathom. Fielding's vein, in the north-west end at the 20, is producing 1½ ton of lead ore per fathom, and likely to improve. The same level south-east end will produce 1 ton per fathom, and highly promising. The Sun vein going east from the shaft, under Gillfield level, is improving, now producing 24 cwts. of lead per fathom, and looking well for further improvement. Altogether, from the report it would seem that the mine is considerably improving as the work of development is carried forward. West Pateley Bridge, 5 to 5¼; the first meeting of shareholders in this company was held yesterday on the mines, and a full report of the proceedings will be given next week. The new level has been extended 6 fathoms, and there is a promising lode in the forebreast. No. 2 shaft is down 8 fms., and the men are getting some solid stones of lead from the bottom.

Penstruthal, 15s. to 17s. 6d.; the workings at the bottom of the mine are steadily opening up what will doubtless prove to be a rich course of copper ore. Cathedral (new issue), 30s. to 32s. 6d.; the lode in the engine-shaft is valued at 20*l*. per fathom; the 42 east, 10*l*. to 12*l*.; the 42 west, 7*l*.

Subjoined are the closing quotations—

Assheton, 1¼ to 1½; Carn Brea, 36 to 38; Devon Great Consols, 3 to 3¼; ...ath, 36 to 38; East Caradon, 1 to 1½; East Lovell, 1 to 3; East Van, 9½ ...; Glyn, 2⅞ to 3⅛; Great West Van, ⅜ to ⅝; Great Laxey, 17 to 17½; ... Wheal Vor, ¼ to ¾; Hingston Down Consols, ⅝ to ⅞; Marke Valley, 1⅞ ...; Pateley Bridge, 4 to 4½; Parys Mountain, 18s. to 20s.; Pennerley, 2⅛ ...; Penstruthal, ⅝ to ⅞; Roman Gravels, 15 to 15½; Tankerville, 10¼ to ...; Tincroft, 18 to 19; Van, 36 to 38; Van Consols, 1¾ to 2; West Assheton, ... 1¼; West Basset, 4½ to 5; West Chiverton, 17 to 18; West Tankerville, 1¾ ...; Wheal Grenville, 1⅛ to 1⅜; Almada and Tirito, ⅛ to ⅜; Argentine, ... 6½; Birdseye Creek, 1 to 1½; Cape Copper, 40 to 41; Cedar Creek, ½ to ...; Chontales, ⅜ to ½; Colorado Terrible, 1¼ to 1¾; Condes of Chili, 6 to ...; Don Pedro, ⅛ to ¼; Eberhardt and Aurora, 8¼ to 8¾; Emma, ⅞ to 1⅛; ...quer, 1⅞ to 2⅛; Flagstaff, 2 to 2¼; Frontino and Bolivia, 1⅞ to 2⅛; ... 1⅛ to 1¼; Javali, ⅛ to ⅜; Last Chance, ½ to ¾; New Quebrada, 3½ to ...; Richmond Consolidated, 8¾ to 9; St. John del Rey, 350 to 370; San Pedro, ... 1¾; South Aurora, ⅜ to ⅝; Sweetland Creek, ¾ to 1; Tecoma, ⅝ to ⅞; ... Mexican, 2 to 2¼.

Collieries.—The continued depression which characterises the ... trade of the country has, we think, now worked its worst ... one of our staple industries—coal. A very large number of weaker collieries have either stopped work or are only dragging ... considerable loss, waiting for the coming of better times; in ... none but the best and most carefully managed collieries can now make anything like fair profits; but there are several of these on the market, and those companies which can now show a margin on the right side between cost and returns are well deserving of the attentive consideration of investors. The high price of coal in 1872 and 1873 has, to a great extent, led to the present depressed state of ... A number of collieries of medium value were opened out, in the hope of taking advantage of the large prices which coal was then realising; a largely increased supply was, therefore, thrown on the market, with the result which we ... With this result, however, it is impossible for the colliers to maintain the exorbitant demand for wages which they have made, and as certainly as the price of coal has already become depreciated, so surely shall we see a material reduction in the cost of producing. While weighing the value of colliery investments it is worth while to note that, notwithstanding the weather, an increased ... of coal is coming into London, and the price of steam coal is, all over the ..., either firm or steadily rising, while the shipments increase every week. ... In such depressed times as the present that the investor does wisely who ... one or two sound and flourishing collieries in which to place his money, ... cannot be a matter of much difficulty to fix a choice amongst the few first-rate ...ies in the market. Those who have been able to fight against the present ... and in the face of them to make profits, must, *primâ facie*, appear satisfactory investment, for if profits can be earned now such profits must be considerably increased so soon as any revival of trade may be experienced, and this revival ... time. Low prices in the coal market invariably mean increased demand, ... in turn will give rise to higher prices, and at the same time a reduction of ... and other expenses of production, is rapidly taking place. The invariable ... from depression will come upon us before long, and good collieries have, ... confident, a very favourable time to look forward to. There can be little ..., therefore, that a judicious investment in colliery property will reap a rich ... The following are the closing quotations of some of the more prominent ... shares:—Bilson and Crump, 6½ to 7½; Thorp's Gawber, 4⅛ to 4¼; New ..., 3½ to 4; Alltami, 4¾ to 5¼; Cardiff and Swansea (9*l*. paid), 1¾ to ...; Chapel House, 3 to 3½; the new pits, now within an estimated depth of about ... of the deep measures, will probably be finished in about four or five ... Another seam of coal has recently been cut, and the works are reported in a most flourishing condition. Cannock and Huntington are at 1 prem.; Hamstead, 1 prem.; Mid-Cannock, 5 prem.; Sandwell Park, 26 to 27; Sandwell Park new shares, 17 prem.; West Cannock, 10 prem.; and West Cannock new shares, 2½ prem.

The numbers are published of 80 bonds of the Val Barbina (Italian) Nickel Mining Company (Limited), which have been drawn for repayment.

The Rio Tinto Company have announced the numbers of the Seven per Cent. Mortgage Bonds which were drawn on the 1st inst. for payment at par. The drawn bonds will cease to bear interest on July 1, on and after which date they will be paid either at the offices of the Société Générale de Crédit, Industriel et Commercial, 72, Rue de la Victoire, Paris; or at the Rio Tinto Company's office in London. Bonds to be paid in London must be left three days previously for examination.

Miners' National Union.—Mr. Thomas Halliday, formerly president of the Amalgamated Association of Miners, has been appointed secretary to the Miners' National Union, in the place of Mr. W. Crawford, of Durham, who has held the appointment since the formation of the Union. Mr. David Moulson, of South Yorkshire, has been re-elected treasurer.

New River Company.—At the Auction Mart, on Wednesday, Messrs. Edwin Fox and Bousfield sold in lots some of the 100*l*. shares in this corporation. After a keen competition, the prices realised were 320*l*. for the paid up shares, and 265*l*. to 280*l*. for those with 60*l*. paid.

Society of Engineers.—At the meeting, on Monday, a paper will be read on "The Underground Pumping Machinery at the Erin Colliery, Westphalia," by Mr. Henry Davey.

FROM A LONDON STOCK BROKER'S CIRCULAR.

The present aspect of affairs in the East is looked upon with considerable uneasiness, and has the effect of keeping our markets in a very unsettled state. The foreign market, as a matter of course, is the most sensitive to any adverse political rumours. The feature of the week has been the fall in all Russian stocks, which have been very heavily sold. Argentine bonds were also much depressed earlier in the week, some apprehension being felt as to the payment of the dividends and sinking fund; the publication, however, of a reassuring telegram by Messrs. Murret and Co. has caused a favourable reaction in the market. Egypts and Turks show no great change for the week, other foreign stocks dull. The railway market is in a very inactive state, with the exception of Brighton and Great Northern A, which have fallen; the other lines show no great change. Consols have been unfavourably affected by the news from the East, and are rather lower for the week.

Friday Morning. J. Y. Watson, Jun.

West Tankerville.—Capt. Waters telegraphs:—"West Tankerville: 75 south improving; other places as last week. Sold 25 tons of lead ore, for 366*l*. 5s. Report to-night."

Tankerville.—Capt. Waters telegraphs:—"Missed post last night. Bottom end Tankerville, lode 15 ft. wide, worth 14 tons per fathom. Stopes are looking well. Full report to-night's post."

North Laxey.—The lode in the new level (136 fm.) is improving in value. The new steam-engine is expected to be set to work next month.

Glenroy.—The lode in the bottom of the winze between the 25 and 40 has been opened on southwards this week, and is worth 3 tons of lead ore and 4 to 5 tons of blende per fathom, making the value quite 80*l*. per fathom. The water is out to just the back of the 40, where a good lode is known to be cut, but not driven on yet. It is contemplated to erect forthwith a portable steam-engine, which can can be done quickly and cheaply, and will make the operations independent of dry weather. In the meantime the crusher is being erected, and will shortly be at work, when considerable returns of lead and blende may be looked for; indeed, the prospect of this mine becoming before long rich and profitable, like its immediate neighbour Great Laxey, is becoming daily strengthened.

South Roskear.—The course of tin discovered by sinking Dunkin's shaft below the 112 continues in the 122, driving east. The lode in this level is worth 40*l*. per fathom, and when properly laid open can be stoped and rendered at the stamping-mills for 4*l*. per fathom. This valuable discovery bids fair to make South Roskear the prize of 1877.

Sunnyside (Lead).—These mines are making rapid progress in the development of the desired points. The great Harehope Gill lode is believed to be nearly reached. A strong body of water is issuing from the rock, indicative of a masterly and highly mineralised lode being in close proximity. Good progress is being made, and a sampling of ore of superior quality will be made next week. The machinery works well.

THE COAL TRADE

Mr. J. R. Scott, the Registrar of the London Coal Market, has published the following statistics of imports and exports of coal into and from the port and district of London, by sea, railway, and canal, during May, 1876:—

Imports.

By sea.	Ships.	Tons.	By Railway and Canal.	Tons	c.
Newcastle	147	118,314	London & North-Western	87,973	5
Seaham	20	8,547	Great Northern	72,844	0
Sunderland	98	65,750	Great Western	61,455	0
Middlesborough	3	888	Midland	101,029	0
Hartlepool	106	38,609	Great Eastern	44,196	9
Scotch	16	5,809	South-Western	840	7
Welsh	8	2,266	South-Eastern	1,375	3
Yorkshire	31	8,557	Grand Junction Canal	396	15
Smallcoal & cinders	26	5,407			
Culm	1	330			
Total	456	254,477	Total	370,109	19
Imports—May 1875	433	230,630	Imports during May 1875	366,470	10

Comparative Statement, 1875 *and* 1876.

By Sea.	Ships.	Tons.	By Railway and Canal.	Tons.
Jan. 1 to May 31, 1875	2487	1,399,237	Jan. 1 to May 31, 1875	2,083,757
Jan. 1 to May 31, 1876	2414	1,418,747	Jan. 1 to May 31, 1876	2,052,564
Increase—present year	—	19,510	Decrease in the present year	31,193
Decrease—present year	73	—		

Exports.

Railway-borne coal passing "in transitu" through district...Tons		55,084
Sea-borne coal exported to British possessions, or to foreign parts, or to the coast	57,971	
Ditto, sent beyond limits by railway	9,714	
Ditto, by canal and inland navigation	1,238=	68,923
Railway borne coal exported to British possessions, or to foreign parts, or the coast	27,891	
Ditto, by rail beyond district	114	
Ditto, by canal and inland navigation	239=	28,244
Sea-borne coal brought into port and exported in same ships		2,257
Total quantity of coal conveyed beyond limits of coal duty district during May, 1876		154,508
Ditto, May, 1875		134,762

Comparative Statement, 1875 and 1876.

Total distribution of coal from Jan. 1 to May 31, 1876	787,483
Total distribution of coal from Jan. 1 to May 31, 1875	743,365
Increase in the present year	44,118

General Statement, 1875 *and* 1876.

Decrease in coals imported by railway and canal during the present year	31,193	
Less increase by sea	19,510=	11,683
Add increase in exports		44,118
Total decrease in trade within London district during present year		55,801

Chain Pumps.—Dr. Pothetos, of Naxos, has patented some improvements in apparatus for and in the means of raising water. The principal feature of the invention consists in the action of a cup chain, which to facilitate ascension is made to pass over a series of drums in such a manner as to form a screw, the object of such arrangement being to cause the greater part of the weight of the raised water to be borne on the axes of the drums, so that all the force that is required is merely that which is sufficient for the traction of the chain. In ordinary chain pumps the weight of the raised water acts directly and tangentially on the drawing or driving drum, whilst in the present case this drum only bears the strain consequent on the conveyance of the chain.

Notices to Correspondents.

*** Much inconvenience having arisen in consequence of several of the Numbers during the past year being out of print, we recommend that the Journal should be filed on receipt: it then forms an accumulating useful work of reference.

SHARE DEALING.—We never interfere in the sale or purchase of shares; neither do we recommend any particular mine for investment or speculation, or broker through whom business should be transacted. The addresses of most of the latter appear in our advertising columns.

IMPORTANT NOTICE—REDUCTION OF POSTAGE ON THE "MINING JOURNAL."—In consequence of the new POSTAL CONVENTION, which came into operation on July 1, the postage of the *Mining Journal* to many countries will be reduced to one fourth. Henceforth the subscription will be 1*l.* 10s. 4d. per annum (39 frs.), postage included, for the following countries. The amount will, if desired, be collected at the subscriber's residence at the end of each year. The subscription continues until countermanded:—Austria, France, Belgium, Denmark (including Iceland and the Faroe Islands), Egypt, Germany, Gibraltar, Greece, Heligoland, Italy, Luxemburg, Netherlands, Norway, Portugal (including Madeira and the Azores), Roumania, Russia, Servia, Sweden, Switzerland, United States, Malta, Turkey, Morocco, Tunis, and the Canary Islands. Spain 1*l.* 19s. (50 frs.)

AVIS IMPORTANT—AUX ABONNES ETRANGERS DU "MINING JOURNAL."—A cause de la nouvelle CONVENTION POSTALE il y avait, à partir du 1er Juillet 1875, une grande diminution du prix de l'abonnement du *Mining Journal* pour bien des pays dont le taux des postes était jusque là bien élevé. A partir du 1er Juillet le prix de l'abonnement est de 39 frs., le port compris, pour l'Autriche, Belgique, France, Danemarck et ses dependances, l'Egypte, l'Allemagne, la Grèce, l'Italie, Hollande, Portugal et ses dependances, Roumanie, Russie, Servie, Suède, la Suisse, la Turquie, l'Afrique septentrionale, etc. Le montant, si l'on le veut, sera touché a domicile, la fin de l'an. L'abonnement continuera sauf avis contraire.

Received,—"J. B." (San Francisco): The copies have been forwarded—"J. B. A." (Adelaide)—"B.S." (Maidanpek)—"F.Y."—"W. M." (Dublin)—"Associate"—"Shareholder" (Rossa Grande)—"A Coalmaster"—"N.B." (Glasgow)—"J.K." (Kirkstall)—"J. H."—"Hibernian:" The statements in circulars should always be enquired into—"E. H."—"Shareholder" (Rosewall Hill and Ransom United): See an advertisement in this day's Journal.

THE MINING JOURNAL,

Railway and Commercial Gazette.

LONDON, JUNE 10, 1876.

COMMERCIAL PANICS, AND LIMITED LIABILITY COMPANIES.

In the present unparalleled depression in mining, in manufacturing and commercial business throughout the whole of the United Kingdom, it may not be either unprofitable or uninteresting to endeavour to ascertain its cause or causes, so as to prevent if possible a recurrence of similar disastrous visitations. It is universally admitted that there are commercial epochs in the history of a nation, periods of prosperity and adversity, an ebb and flow of trade and commerce; and as the greater the altitude of a mountain the greater the depth of the valley, so the more speculative and successful our merchants, manufacturers, and traders have been, the more acute and severe the depression in every branch of industry when the trying ordeal has to be experienced. The last sheaths of a successful commercial harvest were reaped some two years ago, since which time there has been a winter of unparalleled stagnation throughout the whole country, from which every individual member of the community has more or less suffered.

Of course many causes have been assigned for these periodical commercial panics. Sir J. M'KENNA the other night in the House of Commons propounded the somewhat novel theory that they could be traced to the practice of banks taking deposits repayable at call, or after a few days' notice. Sir JOHN evidently forgot the fact that by far the greater part of the business of the country is done upon credit, or by means of borrowed money, and until the millennium day when trade and commerce shall be conducted upon the strictly for ready cash principle, so long will merchants, manufacturers, and traders be compelled to resort to the bank for capital in emergencies. The banker having received these deposits is of course liable for the interest, and consequently is compelled to employ this money at a still higher rate, which rate the merchant or manufacturer is willing to pay, and without which timely accommodation much of the trade of the country would, as at present conducted, soon be brought to a standstill. Possibly there is a sub-stratum of truth in the contention of Sir JOHN, and the banking deposits at call may act somewhat prejudicially in the interests of trade, but we may depend upon it we must go further down for the principal reasons of these commercially disastrous events, and their origin is traceable to more extended operations, and which to a larger or lesser degree appertains to almost every section of the community.

The universally accepted theory is that these commercial panics, or trade depressions, are due to, first—reckless trading; secondly, foreign competition; and to which we make bold to add a third—or, rather, to contend that the two generally accepted causes of evil are superinduced by limited liability companies. Probably our contention will be fiercely combated by many, and denounced as specious and absurd. We well remember the moral philosophy taught by the fable of the strength which appertains to the united bundle of sticks, and are as ready as any to admit the truth of the assertion that what one man cannot accomplish a company of men may readily perform—nay, more, we are quite at one with those who point proudly, and deservedly so, to many of those gigantic and nationally beneficial undertakings which could only have been carried out by joint energy, enterprise, and capital; but our contention, nevertheless, is that in the every-day commercial relationships of life limited liability companies are not the best fulcrums of the nation's prosperity, but that many of them are, on the other hand, only rotten props which serve to bolster up decaying properties, and giving them a fictitious value which should be condemned by every rule of commercial morality.

We need not now enter upon the mode by which some of our modern liability companies have been promoted—the recent disclosures in the law courts as to the large douceurs which certain editors of the money department of our London papers have received show to what source many of the favourable notices which appear of companies in process of incubation may be traced. We may be quite sure that every undertaking brought out under the fostering care of a limited liability company, or an old-established works about being transferred to a limited company, has a fictitious value set upon it which the promoters, and in many instances the directors, are ever ready to endorse and magnify. We are seriously afraid, however, that so long as there is the feverish restlessness amongst those who have a little capital at command—this inordinate haste to get rich—the more safe and legitimate departments of trade and commerce will be overlooked, and bubble schemes and ephemeral speculations still command the attention of the public. Whatever may be said or thought to the contrary, these limited liability companies beget a recklessness of trading which is a powerful means of bringing about these periodical panics from which the nation so severely suffers, and are in many instances ruinous rivals to the more prudent and discreet private manufacturer or merchant. Many of these limited companies are promoted by needy speculators or nothing-to-lose engineers, and if launched successfully are managed by high paid secretaries (who have scarcely anything more to do than draw their salaries), and by irresponsible directors, who attend board meetings once a week or once a fortnight, and give instructions which may or may not be carried out. For a few months, it may be a few years, all things flow smoothly enough; good dividends are paid—possibly paid out of capital not legitimately earned—the business is extended, and other trades or manufactures branched into it. The dividends now begin to dwindle down, loud-carping shareholders get dissatisfied, and urged on by such complaints the managers and directors, in their anxiety to make dividends, grow more reckless, and undersell the steady plodding but more cautious private firm. At length the bubble bursts, the company is wound-up in the Insolvent Court, and the shareholders find that, instead of an *Eldorado*, they have thrown their money into a whirlpool. Such would only be a just retribution on the shareholders for being too easily beguiled by the promises of large dividends, but unfortunately this is not the only evil which has been produced. The competition which these limited companies are enabled to carry on with shareholders' capital inflicts an irreparable injury upon the private manufacturing firm, who, having their whole at stake act with proper precaution and discretion, and who are compelled to reduce profits to the merest minimum by the unwise and unjust competition of the limited companies.

Possibly it will be said that we have used somewhat strong language towards limited liability companies generally, when it must be acknowledged there are a large number ably conducted, and which have achieved great undertakings. Granted, but the recent exposures prove also that there is a large number of companies promoted and carried on for a short time whose very prospectuses when analysed show the hollow pretences upon which they are based. It is against these that we would caution the public, and it is these which produce such incalculable mischief in the manufacturing and commercial life of England. We would gladly see these limited companies hedged round with some safeguards, but candidly confess we cannot see how it can be done so long as people with a little money at command will be led astray by the tempting baits so constantly held out gilded with such golden promises. These commercial panics and the rapidity with which limited liability bubbles are bursting in every direction should teach salutary lessons, and it is in this hope we have been induced to draw public attention to what unquestionably is one powerful element in bringing about those disastrous commercial depressions from which the nation is again acutely suffering.

THE COAL TRADE OF GERMANY.

In his just published report on the trade of Bremen-Bremerhaven for the year 1875 Her Majesty's Consul makes some observations on this subject which are worthy of notice. Although coal cannot be reckoned among the staple articles of trade of the port, the great importance attaching to it as regards commerce and navigation, as well as industry in all parts of the world, and the particular notice which it has attracted during the past year in that part of Germany, are sufficiently cogent reasons for its claiming a place in his official report. It has for many years, he tells us, been a source of regret, particularly among the coal pit owners of Westphalia and Rhenish Prussia, that the two chief sea ports of Germany—Hamburg and Bremen—have hitherto at least imported a great proportion of their wants both for the use of their steamers and for other commercial and industrial purposes, as well as for household use in both cities, from Great Britain, instead of importing their entire supplies from the coal fields of their own country, which are situated at so short a distance from either port. Before the completion of the recently-opened railway, which now connects Hamburg and Bremen in an almost straight line with Westphalia, there appeared, indeed, no probability of the many efforts already made in former years towards enabling German coal to compete with its British rival being attended with any success, as it was found quite impossible to fix the rates of carriage (including other unavoidable expenses) nearly or exactly equivalent to the rates of freight for coal from British ports. Last year, however, matters assumed a different aspect, for an arrangement was come to by the parties concerned, by which coal is carried between the Westphalian and Rhenish pits and the North Sea ports at a greatly reduced rate. Although by this measure the charges have not been deminished so far as was desired by the industrial and commercial delegates (the rate fixed by the railway company still exceeding the freight from British ports by about 5½d. per ton), still the effects have not been long in making themselves felt in a manner which shows that the railway company, as well as the coalowners alluded to, must already have derived a considerable profit from the change.

The following table shows the relative proportions of British and German coal imported into Bremen from 1871 to 1874:—

1871—British	64·7 per cent.	—	German	26·3 per cent.
1872— ,, ...	48·5 ,,	—	,, ...	51·5 ,,
1873— ,, ...	37·6 ,,	—	,, ...	62·4 ,,
1874— ,, ...	35·7 ,,	—	,, ...	64·3 ,,

When the returns for the year 1875 are published there cannot be much doubt that the German coal imported will bear a still greater proportion to the sum total.

BOILER MANAGEMENT AT COLLIERIES AND IRONWORKS.

Colliery and ironworks managers would do well to avail themselves of the subsisting depression in the market to look well to the condition of that class of their working apparatus which is of the first importance, and which is usually so large a source of anxiety. We refer to the steam machinery. We are all naturally prone when trade is brisk to overlook the requirements of this class of our apparatus, with the result, in only too many instances, that we are supplied with a painful illustration of the old adage of "more haste less speed." A large number of the boiler explosions that have happened at collieries might have been prevented if indications of coming trouble had not been overlooked in the hurry to complete orders under execution, and which, probably, were pressing. There are few proprietors who owning such machinery, and intending to use it again, are not fairly hopeful that the time will arise for its employment to as great an extent as ever. Before, then, such activity returns let them be especially mindful of the lessons of the past. If their boilers are not under inspection and insurance they should get the best otherwise independent help available, and reports having been furnished of the state of the machinery, our advice is that they should do more than merely hand over those reports to millwrights. They themselves should be perfectly satisfied that the repairs, it may be, which are declared to be necessary, and which are recommended, are carried out. It would seem hardly necessary to enforce so plain a piece of duty, still there is need for it.

Of this, distressing illustration has been furnished in the accident at Felling Shore, Newcastle-upon-Tyne, at the works of Messrs. GALLON, by which five people lost their lives. The exploded boiler was No. 1 of a set of five, and was a Lancashire boiler, 32 ft. long, 7 ft. diameter, with two tubes 2 ft. 4 in. diameter, made of ⅜-in. plates, and usually worked at from 30 to 35 lbs. pressure. The position of the fragments and the direction of the rents lead to the conclusion that the first rupture must have been at the back end, and a little to the right of the bottom, and at that place there was a plate which had rent, which had so corroded as to be very thin. The corrosion had arisen from the leakage of a seam near, and had continued until the plate was too weak to carry the ordinary pressure, or the slightly increased pressure caused by temporary stoppage of the engines. These boilers had been under assurance, and, consequently, under inspection. For two years, up to April 1 this year, they had been in the care of the Midland Steam-Boiler Inspection and Assurance Company. By one of the inspectors of that company the boiler which exploded was thus reported upon on June 24 last:—

"The underside in flue: The seam is leaky at the bottom, 2 ft. from the back end, where it is resting on the mid-feather wall, the leakage is corroding the plates, and the boiler must not start until this is repaired, as it is dangerous on account of the plate being concealed under the brick work, and if not repaired now will go too long, and likely cause an accident."

When the inspection was made upon which this report was based, the Inspector showed the boiler smith, who usually did Mr. GALLON'S repairs, where the leakage was corroding the plates, and the testimony is that he remarked that "if he did not repair it it would be blown into the street some day." We are not surprised that the Coroner should have told the Inspector that he was a true prophet, for so he was—this boiler (No. 1) was blown into the street. The report was not unheeded. When it reached the hands of Mr. GALLON he called his boiler smith, and having read it, instructed him to carry out its recommendations. This man says that he went to the back end of the boiler and repaired a place about 9 ft. from the back, but he could not see any leakage at 2 ft. from the back, and he was satisfied that he had done the work well when he found that water having been again turned into the boiler it stood for 12 hours without displaying any faultiness. Every one seems to have been content with what this man did. They all assumed that he knew what had to be done, and that he had done it. The boiler-smith, however, like many others of his class, showed that his views of danger are based upon insecure premises. Such men usually infer that because there is no leakage all is well. As the condition of the boiler after the explosion showed, leakages too frequently mean corrosion. That corrosion was pointed out in the report, and the stopping of the leakage would not restore strength to the corroded plate, and to the leaving in of the corroded plate the accident would seem to be traceable.

The Coroner at the enquiry remarked that the insurance companies might, he thought, insist more on the repairs being done as ordered. The duty of seeing that repairs recommended have been done had better, however, remain with the proprietors, who must not forget that they risk their assurance if the repairs are not properly carried out. The companies assume the position of physicians to their patients, or lawyers to their clients; they recommend certain medicine, or give certain advice, but they do not assume the responsibility of seeing that their patients or their clients act upon the instructions which they have received. Furthermore there would oftentimes be not a little delay as to the result of such a practice—delay on an occasion sometimes of much importance to the daily business operations of the works. Complete and thorough supervision of boiler repairs should never be neglected. The frequency of accidents after such repairs only too clearly, however, show that such supervision is too often neglected. Steam users should not only have their machinery frequently reported upon, but they should closely follow up those reports. Not only is this at all times desirable in the matter of safety, but it is especially desirable at this time when we are threatened with an increase of that imperial supervision against which traders are now more than ever complaining. Government inspection of steam boilers has been late again and again threatened. The threat has the sympathy of the country as a whole, and unless steam users are themselves as determined cautious and as resolutely prudent as we recommend they should be, legislators will take the matter in hand resolved to thoroughly deal with it.

THE SLATE TRADE.

The slate trade of North Wales continues to be very brisk—the demand is great, with every prospect of its continuing—and the prices, as fixed by the Carnarvon Slate Club in December last, and which took effect from February 1, are fully maintained, and easily obtained by all the quarry proprietors in the Nantlle and Llanberis districts, except only as regards two of the Nantlle quarries, the managers of which, it is generally understood, for special reasons applicable to those quarries, continue to sell on the tariff of November, 1875, being somewhat lower than the present Slate Club tariff.

High as the present price of slate undoubtedly is, yet there appears to be every prospect of its being maintained. The rise has only been in proportion to other building materials and labour, and it is not higher than the quarry proprietors can afford to sell at if they are to obtain an adequate return for the large amount of capital embarked. Since the time of the Penrhyn strike, when Lord Penrhyn conceded to the committee of the North Wales Quarryman's Union every demand they thought proper to make, and more even than they originally required, including the appointment of a committee of quarrymen to set the bargains in his quarry, the wages of the whole district have risen considerably, and at the second annual meeting of the Union, which took place at Carnarvon on the 24th ult., the committee in their report congratulated the members on the success of their efforts, and stated that "they had good ground for believing that more by upwards of 150,000*l.* had been paid in wages during last year in the slate quarries in North Wales than in any previous year." The rise in the price of slates has followed as a necessary consequence, but there are still some strange anomalies attending the trade.

The managers of the two large quarries of Penrhyn and Dinorwic continue to sell on a lower tariff than that fixed by the Carnarvon Slate Club, and obtained by its members, but from the exclusive character of their dealings slate merchants generally cannot obtain a supply at this reduced rate, and are thankful to obtain, and in many cases urgently press for, a supply from the smaller quarries at Nantlle and Llanberis at the higher tariff. These latter quarries for the most part deal with the slate merchants direct instead of with slate agents, through whom alone, with certain favoured exceptions, customers can obtain a supply from Penrhyn and Dinorwic. That the proprietors of the large quarries should continue to sell at less than the market value is the subject of much comment in the district and amongst the trade. They can, however, well afford to do so, seeing that their quarries are their own freeholds, and, consequently, not subject to any payments for royalty or otherwise to any superior landlord, which almost all the smaller quarries are, and particularly those in the Nantlle district, many of which are held under the Commissioners of Woods and Forests, who are well known to be the most exacting landlords in the kingdom.

The royalty they are now obtaining from several of these quarries is about 5s. a ton, rather more than less, which about equals the extra price which the lessees are obtaining over the large quarries, so that, assuming other expenses to be equal, the returns per ton to the proprietors of each are in a measure equalised, but that the owners of the freehold quarries should sink the value of their freeholds, and be content to sacrifice 5s. a ton, appears strange, more especially as the yield of these two quarries is roughly estimated at about 200,000 tons per annum, 5s. per ton on which would produce what most people would look upon as a princely income.

THE IRON AND COAL TRADES—THE FALL IN WAGES.

The close of the great strike in the coal trade of South Yorkshire and North Derbyshire—the men having agreed to go in at a reduction of 12½ per cent.—appears to us to be an event fraught with great importance to the future of the coal and iron trades. If prosperity is ever to be restored to the British iron trade, our ironmasters must be enabled to produce at sensibly lower rates, and a fall in the price of coal and labour can alone enable them to attain this object. We have no desire to oppress the working classes or to force upon them an inadequate remuneration for their hard toil; at the same time it is in the interest of the working classes themselves, their remuneration must be such as will leave their employers a reasonable and even tolerably liberal return upon their capital. We say a tolerably liberal return for this reason. Under any circumstances, trade is liable to be capricious, uncertain, fluctuating; and the ironmaster may have great difficulty occasionally in keeping his works going even if his workpeople assume an attitude of docility—an attitude which it must be confessed is somewhat rarely witnessed in these times. There was a well-written article in our contemporary the "Graphic" last week in illustration and explanation of the commercial depression to which the country has undoubtedly been reduced. In branches of the national industry there are stagnation and unemployment. What are the causes of this state of affairs? The writer seems to consider that other countries are becoming as sharp and as acute in manufacturing pursuits as we claim to be. We have gained in times past an undoubted industrial supremacy among modern nations, but our contemporary appears to consider that this very supremacy has been the occasion of our present troubles. It has induced envy, and has involved imitation. Foreigners have copied our machinery, pirated our ideas, so that they have now set up in business for themselves, and compete with us upon markets of which we once had a practical monopoly. This being the case, there appears to be but one process by which we can hope to recover a large measure of our old industrial prestige and invincibility. We must learn to produce at a cheaper rate, and so press our foreign rivals harder. Our capitalists must be satisfied with smaller dividends, and our workmen must so far co-operate with their employers as to submit to the lower wages which imperative necessity dictates.

The circumstances of the case appear to be practically irresistible. The delegates and their clients have the alternative of submitting to the force of influences which cannot be avoided either by masters or men. In almost all trades wages are declining, and their very decline weakens the force of a once formidable power of resistance. The collapse of the South Yorkshire and North Derbyshire strike affords tolerably conclusive proof of this. In the comparative activity and prosperity in the South Yorkshire

made any attempt to reduce wages, if it had been made at all, would have had to overcome the most stubborn opposition. But now the exchequer of the Miners' Association has been proved to be practically empty, and the resistance of the miners has, after all, been slight, or comparatively slight. The result of this strike would seem to indicate, indeed, that the era of strikes in this country—an era which has been too much prolonged—is at length drawing to a close. The uses of adversity, if not exactly sweet, are at any rate salutary; and masters and men have learnt that they must work more harmoniously and more cheaply in order that they may grapple with the formidable common difficulty of increasing foreign competition. We trust, then, that one of the current difficulties of our ironmasters may be said to be declining in intensity.

COMPRESSED FUEL.—Another establishment for the manufactnre of Loiseau's compressed fuel has been set to work at Port Richmond, Pennsylvania. The fuel now made is composed of 95 per cent. coal-dust and 5 per cent. clay, with a small amount of glue-like mixture made of rye flour and slaked lime. It is in pieces of the shape and size of hens' eggs. To make the pieces impervious to water they are dipped in a solution of candle gum, a residuum of paraffin and crude benzine. All the manufacturing processes are novel, ingenious, and entirely automatic. The finished coal-eggs are dried in an oven heated to a temperature of 250°, and when they come out they are ready for burning, but must be waterproofed to protect them from dissolution if caught in a rain storm. For this purpose another travelling wire belt, across which there are upright partitions of wire, catches them and gives them a bath of two seconds in an iron tank containing a solution of candle gum and benzine. The tank is enclosed to prevent the escape of the fumes. From the tank the coals go to a big bin called the evaporator, which holds 15 tons. The benzine fumes rise through pipes to a condensing coil, and the recovered liquid is conducted back into the tank from which it ran into the bath. After remaining about an hour in the evaporator the coals fall upon another moving belt, which deposits them in the final receptacle, the pocket, from whence they roll into the coal carts.

THE MINERALS OF TASMANIA.—Efforts it appears are now being made to introduce extensively into this country the iron ore of Tasmania, and already it has been tried with a large admixture of English stone. A few days since we saw some experiments made with it prior to Sheffield in the manufacture of ship-bolts. The iron was a mixture of about one-tenth English ore and the remainder Tasmanian. It appeared to be equal to the best Swedish, and the manipulator, who is extensively engaged in the manufacture of bolts, clam-plate nails, and steel corfs, said he would as soon have it as any Swedish iron he had used. He took a small quantity of the ore, and putting it in an ordinary forge fire he smelted it, and then drew it out under the hammer as if it had been a piece of ordinary iron. In some samples that have been analysed as much as 13 per cent. of manganese was found, whilst there was no sulphur or phosphorus. With such a large proportion of manganese the ore is particularly well adapted for making the description of pig from which Siegeleisen is made, and which is found necessary in the production of Bessemer steel. Tasmania, it may be said, has plenty of coal beds, but they appear to contain a great deal of resin, and whilst valuable as a source for the production of mineral oil are not adapted for the smelting of iron. In one district in Tasmania the crystalised hematite had been found on a lode cropping out of the ground on a hill 200 ft. high. The magnetite has been found in lumps lying on the surface in large beds of red oxide. Whether it would pay to smelt it by means of charcoal at a profit we cannot say, but there is very little doubt but what it could be profitably and advantageously worked along with the English ironstone, and converted into steel. There are also extensive deposits of tin, and at Mount Bischoff it occurs not only as an original deposit but as a stream sent through the surface drift. From the very large deposits of magnetic and other ironstone found in Tasmania, and from what we saw of an admixture of it with 90 per cent. of English stone, we are of opinion that its value can scarcely be over-rated. We believe that the ore could be delivered in England at about 2l. per ton, so that those interested can well calculate whether it could be made to yield a good profit or not.

COAL AND IRON IN THE UNITED STATES.—The total production of anthracite coal in Pennsylvania to May 13 this year amounted to 2,997,595 tons, against 4,367,942 tons in the corresponding period of 1875, showing an increase of 929,563 tons this year. The total production of bituminous coal in Pennsylvania to May 13 this year amounted to 1,119,071 tons, against 1,063,583 tons in the corresponding period of 1875, showing an increase of 55,488 tons this year. The demand for English, Scotch, and American cannel coal at Boston has been dull, and sales have been confined to small lots at previous prices. In Nova Scotian coal scarcely anything has been done at Boston. Gas coal has been in demand at Boston. There has not been much passing in Cumberland (Maryland) coal at Boston. Anthracite coal has been dull at Boston; retail sales have been made at $7 to $7·50 per ton. American iron rails have been quoted at the works at $40 to $45 per ton currency. Old rails have made $22½ to $25 per ton currency.

TRADE OF THE TYNE AND WEAR.

June 8.—Some branches of the Coal Trade have been pretty brisk of late; the steam coal works around Blyth, in Northumberland, have been well employed, most of them, indeed, been making full time, as the demand for this coal for export to the Baltic and other foreign districts has been good. It is considered by many that the rumours of war now prevalent have to a certain extent stimulated the demand for coal and iron. Should, however, war actually break out the effect might be quite opposite. The demand for gas and house coals has naturally fallen off as the season has advanced, but considerable business has been done in all kinds of first-class coals for coke. Shipping has, consequently, been better employed of late, and freights have improved a little. In Durham only the gas and coking coal works are well employed. Small coal and ordinary manufacturing coal continue to be a drug, and, consequently, very low prices are got for them, and there is no chance whatever of any profits to be made in the great majority of cases. Under these circumstances it can excite no surprise that the Durham coalowners have again demanded a reduction in the wages of 10 per cent. on the present rates. Only dire necessity would have caused them to arrive at this decision, and as some important meetings have been held by the men, and the matter has to a certain extent been discussed, it is cheering to observe that so far the question has been met in a fair, calm spirit.

STEEL FROM CLEVELAND PIG-IRON.—For some time past experiments have been made at the Tudhoe Ironworks, with the view of manufacturing steel from Cleveland pig-iron. During the previous week 50 tons of double-headed steel rails of the north-eastern form have been rolled for the North-Eastern Railway Company containing 99 per cent. of iron made exclusively from Cleveland pig. Of 152 ingots 147 turned out good sound steel rails. As might be expected, the result of the falling (shock) test are not so high as in the case of the best Bessemer steel rails, but on the other hand the fracture is such as to warrant the hope that the durability of the rails will be quite equal to that of any rails going. The process of manufacture is by no means complicated. Cleveland pig-iron is thoroughly puddled in a Casson-Dormoy furnace, hammered into blooms, and the blooms converted by the Attwood process into ingots. Taken separately there is no novelty in any of these operations. Cleveland pig-iron, as is well known to ironmasters, may be converted by thorough mechanical puddling, so as to contain more than 0·25 per cent. of phosphorus in the puddled bar, but the conversion of such bars into steel by admixture with purer kinds of iron is costly, and has never been attempted on any large scale with any financial success. The grand object of the trials now going on at Tudhoe Ironworks is to produce a cheap and durable steel of sufficient strength and of a regular quality, and such an object, it is believed, can only be attained by a combination of processes similar to that recently patented by Messrs. Shaw and Hutchinson. What may be the result of these trials it would be premature to say, but at a time when steel is rapidly taking the place of iron for almost every imaginable purpose, when pure ores are becoming more and more scarce, their importance to all interested in the Cleveland iron district cannot be overrated.

NORTH OF ENGLAND IRON TRADE.—At Middlesborough, on Tuesday, there was a small attendance, but, like late markets, there was an entire lack of animation, business being done on the most restricted scale both by buyers and sellers, as there is nothing to encourage either one side or the other. Sellers are by no means anxious to do business as a rule at the present low rates, as at best it is but turning over their money, if not involving in some cases actual loss, whilst an utter lack of any indication of revival of trade makes buyers very cautious, and they purchase but sparingly. Though there is such a marked depression in finished iron and in trade generally, there appears to be a healthy tone commercially. There is no further probability of failures. If things are in a low condition firms generally are not losing much if they are not gaining, and after vainly seeking trade that would afford remunerative results many are content to keep their works unemployed rather than incur loss. This applies more particularly to the rail trade. Plates have within the past few weeks been falling in price more than rails, and platemakers, though fairly engaged, experience a much less active demand. There is no particular change to note in finished iron. Rails keep at 6*l.* nominally for heavy sections; plates, 7*l.* 7*s.* 6*d.*; angles, 7*l.*; bars, unaltered. The prices of foundry iron are fairly kept up; No. 3 is 45*s.* to 46*s.* 6*d.*; No. 6 forge, 44*s.*, with but a small enquiry. The returns of makers' stocks show a larger make of 10,000 tons in May than in April. The stocks, with what iron has been put in warrant stores, have increased by about 4000 tons. The total in makers' hands on May 31 was 115,807 tons. The return, on the whole, is considered very favourable. The Coal and Coke Trades are slack, prices unaltered.

THE MEETING OF THE NORTHERN INSTITUTE OF MINING ENGINEERS IN LONDON.—This meeting, the first that has been held in the great metropolis, may be considered a successful one, although it was hardly possible to avoid a feeling of disappointment in one respect—that is, with regard to the number of members present. Looking at the large number of members in the society, it might naturally have been expected that at least one-third of the members would have attended, but the number present was comparatively small. No doubt the works and machinery to be seen in and near London are of a different class to the machines about collieries, and this is no doubt the main reason of the meeting being so badly attended. As members of the Institute are to be found in every part of Great Britain, a meeting in London ought to have brought together a large number. The papers read possess much interest, and the discussion which must follow at future meetings will afford employment for the members for some time to come. Nearly all the papers are of a practical kind. Those of Mr. Bainbridge, showing ten different modes of lubricating tubs, must throw a deal of light on a very important subject. In these days of close competition every effort must be made to ensure economy, combined with efficiency, and it is well known that many of the old methods of lubricating tubs are of a very wasteful character. The paper of Mr. Cockburn on "Cook's Ventilator" will once more cause a violent outbreak of the "War of the Fans," which has been raging for some time in the Midland districts, and has been smouldering here. That the result will ultimately prove advantageous there can be no doubt, as practical experience must decide as to the relative merits of the various fans now contending for supremacy. The Lemielle has, we believe, retired from the field, but we still have the Guibal, the Waddell, the Leeds fan (said to be a cross between the Guibal and Waddell), Cook's fan, and many others we cannot remember.

REPORT FROM CORNWALL.

June 8.—That a reaction in the tin standard might follow the Banca sale last week was quite anticipated, and, therefore, the announcement can hardly be said to have taken anyone by surprise—though, of course, under any circumstances it was unwelcome. However, since then there has been a counter reaction, and prices now seem to be fairly sustained. Nor does there appear to be any reason why it should be otherwise. The demand, all things considered, is fair, new outlets being gradually opened, and the foreign production is undoubtedly falling off.

The chief subscribers to the premium originated by Mr. Basset for the best boring-machine are—Mr. Basset, 200*l.*; the Duke of Bedford, Lord Falmouth, and Lord Robartes 100*l.* each. Other subscriptions have been promised, so that in this and in the efficient committee appointed to take the matter in hand we have all the elements of a large and practical competition. Mr. Basset is still further adding to his good works on behalf of the mining community by the erection of a laboratory at Camborne for the use of the more advanced students in the different classes of the Miners' Association of Cornwall and Devon.

In the Special Loan Collection of Scientific Apparatus in South Kensington is a model of the "first machine by means of which steam-power could be safely applied for mechanical purposes," and of which Thomas Newcomen, of Dartmouth, was the inventor. This model is said to have been presented to King George III., and was probably prepared as a present to the King by Elias Newcomen, the second son of Thomas Newcomen, about 1760. Mr. Lidstone, in the conclusion of his pamphlet upon this subject, complains that the "importance of this invention has never been publicly recognised in connection with Newcomen's memory; and in no place is there greater apathy on the subject than in the town where he perfected his wonder-working machine. Newcomen's engine was the first introduced into the mines of Cornwall, and it was a Newcomen that first stimulated Watt to improvement. Yet it is not only in Dartmouth that the memory of this steam pioneer is neglected."

A petition, influentially signed by over a hundred miners, managers, pursers, and other interested in mines in Devon and Cornwall, has been forwarded to the Great Western and South-Western Railway Companies with a view to inducing them to arrange for the transit of dynamite by rail. At present considerable inconvenience, as well as expense, is sustained in the conveyance of dynamite to inland towns. So keenly has this been felt that, despite the strict surveillance of the railway companies, packages of dynamite are oftentimes surreptitiously conveyed by passengers. It is urged that the great increase in the use of dynamite during late years makes it absolutely necessary that something should be done, consistent with public safety, to remedy what is so widely complained of. The petitioners allege that so far "no accident has occurred in the transport of dynamite in any country, or by any mode of conveyance, and no accident has ever occurred in connection with its storage." It is also contended that dynamite is safer than gunpowder packed in barrels.

At a special meeting of South Wheal Crofty adventurers, held at Camborne, on Tuesday, for the purpose of appointing an underground agent in place of Capt. Johns, who has been appointed to a similar situation at Dolcoath, Mr. Lean (the purser) in the chair, ten applications from mine agents and working miners, who aspire to this much coveted position, was read. A short discussion took place respecting the fitness, age, and eligibility of the candidates. Proxies for a large number of shares were laid on the table by Mr. Rodd, the late purser, and by Capt. Josiah Thomas, the manager. Mr. Henry Bennetts, late of Mexico, and formerly a tributer of Dolcoath, was proposed by Capt. A. T. James, of South Frances, as a fit and proper person to fill the situation, Capt. James observing that he was full of energy and practically acquainted with the details of mining. This was seconded by Mr. John Carter, of Camborne, and supported by Mr. W. H. Rule, of Penzance. Mr. Rodd, of Penzance, nominated Capt. William Pascoe, late of West Seton, and now the managing agent of the Park o' Mines, for the situation. This proposition was seconded by Mr. Whear, of Camborne, supported by the manager and other shareholders. It was evident that Capt. Pascoe was the choice of the meeting, and being supported by large shareholders there was not much chance for any other candidate. Mr. Henry Bennett's name was withdrawn, and Capt. Pascoe was unanimously appointed, at nine guineas per month.—Capt James said, if he was not out of order, he should like to ask the manager a question or two respecting the quantity of coal consumed in stamping a ton of tinstuff.—The manager was not prepared to answer the question, but believed it took about 112 lbs. per ton.—Capt. James said it took about 1¾ cwt. or 196 lbs., which was about one-half more than ought to be. As Mr. Michell, the engineer, was not present it was arranged to postpone any further discussion of this subject until the next meeting of the adventurers. The consumption of coal is a very important matter, and should have the best attention of the adventurers, and mine agents especially.

THE DUES QUESTION.—The question of lords' dues is, apparently, of very great interest, judging by the manner in which it is being discussed on all sides. A writer in an article on the subject in the *Mining Journal*, after vividly pourtraying the injury done to the land in Cornwall by mining operations, enquires—"Does the money drawn from the mines compensate the landholder for all his loss? Can the county at large ever be paid for the loss it sustains through all this desolation?" And in answer to these enquiries a few statistics may not be uninteresting. In the past 100 years above 60,000,000*l.* worth of copper has been sold at the Cornish ticketings, and over 40,000,000*l.* of tin has been raised, making a total of more than 100,000,000*l.* Of this portion the landholders have had a fair share—on the whole, perhaps, more than 1-20th—5,000,000*l.* in the 100 years, or over 50,000*l.* per annum. This is a very low estimate, and probably if all the accounts were examined the details would show that 7,000,000*l.* in the century, or an average of 70,000*l.* per annum, had been received by the lords. This by no means represents the whole of the landholders' receipts, for wherever a mine is carried on men must, of course, be employed, and cottages built, so that gradually hamlets and towns spring up, oftentimes rendering waste land much more valuable than fertile farms on which large sums have been expended in manure and farm buildings. Thousands of acres of waste land have been reclaimed by the mining population on life leases, and the greater portion of this land has already fallen into the hands of the lords. It must also be remembered that for every acre of land destroyed by the miner double the value is paid to the lord in addition to the dues; sometimes as much as 100*l.* per acre, and that high rents are also given for small water-courses. Then, again, ships are employed in carrying away copper and in bringing back coal for mining and smelting operations; and here, again, the lord is benefited by port dues and by cottages built for the families of sailors. The first railways constructed in the county were for the conveyance of copper to the ports, and of coal from Hayle, Devoran, and Portreath, to the mines in the Camborne, Gwennap, and Redruth districts.

Thus far only copper and tin mines have been mentioned as making valuable returns to the landowners, but beside these mines of lead, blende, arsenic, and other minerals have in addition paid immense sums in dues. West Chiverton in rather over 11 years—from April, 1863, to the end of June, 1874—sold 36,453 tons of lead ores, which realised 527,327*l.*; 4219 tons of blende, 9845*l.*; and 34 tons of copper, 211*l.*; making a total of 537,379*l.* Of this amount the landowners received in dues 35,823*l.*; the shareholders divided among themselves 157,500*l.*; there was paid in labour 241,087*l.*, and to merchants for coal and mining requisites, 102,969*l.* West Seton may be instanced as another fair example of what has been done by Cornish mining. The total value of the copper, tin, and arsenic sold up to October, 1875, was 733,360*l.* Of this amount the lord received 47,914*l.*; and there was expended in labour costs and merchants' bills 493,068*l.*, while the dividend received by the shareholders was 233,000*l.*, and this on an original outlay of 19,000*l.* These two mines—West Chiverton and West Seton—are still making large returns. The lords of the Consolidated Mines, Gwennap receive dues, it is stated, to the tune of 76,800*l.* in 18 years, and many other mines now forgotten have proved indeed mines of wealth to the landowners. These are the prizes for which the miner toils, and the adventurer oftentimes risks his all, knowing that nothing in the world pays like a good mine. There are, of course, many blanks, but even in the blanks the county gains enormously by the expenditure of capital, and the lord receives in most cases rents or dues at a reduced rate.

A glance at the gains of the landowners even in these depressed times will further illustrate the subject. Dolcoath, which extends over about 300 acres of land, and more, probably less, is paying the landowners 3,000*l.* per annum. East Pool, a smaller sett, is paying from 18 0*l.* to 2000*l.* per annum. Tincroft some two or three years ago, in times of high prices, paid over 2000*l.* per annum, and its yearly return to the landowner now is probably about 1200*l.* Carn Brea, too, paid in former days somewhere about 2000*l.*, now probably at the reduced rate about 400*l.* or 500*l.* a-year; West Basset, about 800*l.* per annum; and West Frances now about 400*l.*, in years past more than double that sum. Cook's Kitchen is paying about 300*l.* a-year; this mine was making good returns in 1792 and 1793, when Lord de Dunstanville, the landowner at that time held one eighth of the mine. Wheal Basset, now paying about 500*l.* per annum in lords' dues, has been much richer, and made large returns. West Tolgus expended about 400*l.* per annum in dues of 1-40th. There are others too numerous to enumerate, among the principal of which are Pedn-an-Drea, South Frances, the Grenvilles, the Rosewarnes, Crenver and Abraham, Botallack, Wheal Owles, Providence, the Lovell, and Wheal Kitty. Then there must be taken into consideration the heats and tin streams, dirty and puddle as they appear to the eye. The profits of the lords from the Red River alone in 1874 were estimated at about 4500*l.*, and even now they are estimated at fully 1500*l.*—*Western Morning News.*

REPORT FROM NORTH AND SOUTH STAFFORDSHIRE.

June 8.—The ironmasters report this week a slightly improved enquiry, but the general aspect of the trade is still very far from satisfactory. It would seem that matters in the iron trade have for so long a time been so bad that they cannot be worse, and that any change now experienced must be in the right direction. The pig-iron manufacturers have in some recent transactions been able to reduce their accumulated stock, and in the absence of any serious outcome of the continental crisis there is reason to hope that better times are in store. Samples of pig-iron of remarkably good quality, the make of the Kirkless Hall Company, was shown on 'Change at Wolverhampton, on Wednesday, by Messrs. Lewis and Son, the local agents. The iron in question was made wholly from Algerian ore.

The movements of the South Staffordshire Mines Drainage Commissioners are exciting a strong "feeling" among such of the local coalowners as do not derive any benefit from the measure, and who object to pay the heavy rate imposed without an equivalent. The coalowners around West Bromwich and Oldbury, who have already obtained exemption from rates for underground work, are now claiming exemption from participation in the cost of surface drainage in that neighbourhood. The Sandwell Park Company are among the foremost in this movement.

The following were among to-day's quotations on the Birmingham Stock Exchange:—Cannock and Huntington Colliery, ¾ prem.; Hamstead Colliery, 1 prem.; Sandwell Park Colliery, 27 prem.; Spon Lane Colliery, 1¼ dis., buyers; West Cannock Colliery, 10 prem.; Mid-Cannock Colliery (10*l.* paid), 5 prem.; Pelsall Coal and Iron Company, 5 dis.; John Bagnall and Son, 5; Chillington Iron, 3⅜. The tone of the market for iron and coal shares is weaker.

At Walsall County Court judgment was delivered in the case of Robert Ellis *v.* the Pelsall Coal and Iron Company, in which plaintiff, a puddler in the company's employ, sought to recover certain sums for breach of contract, and two weeks' wages, in lieu of notice, amounting in all to 8*l.* 10*s.* The case was a representative one, about 60 puddlers in the company's employ having made similar claims. For the defence it was contended that the men were stopped owing to a want of orders, a course justified by a custom in the trade. The alleged custom, the plaintiff contended, was invalid. The Judge (Mr. A. Martineau) held that the custom pleaded in the defence was a valid one, but that the men were not stopped working for that reason, and, therefore, gave judgment for plaintiff for 3*l.* 8*s.*, but granted an appeal.

Cwmrhaidr and Cwmcemrhiw estates, near Machynlleth, were sold a few days ago by auction, at Aberystwith, by Mr. Samuel Jones, of Birmingham. They contain 908 acres of arable, pasture, and mountain land, and include the famous Rhaids waterfall, and an ancient mansion, Cwmrhaidr Hall. The purchaser was Mr. Richard Peyton, jun., Birmingham, and the price 9000*l.*, the timber to be taken at a valuation.

In the North Staffordshire Iron Trade orders are very scarce. Not one-half of the mills are working at all, and the remainder are not exceeding six turns per week. Iron of the smaller sizes is the only class which seems to command any attention from buyers. The plate-mills are in very slack operation, competition in this branch being just now very severe. The transactions in pig-iron are very few and small. The market for ironstone is without change, and coal continues in abundant supply.

REPORT FROM MONMOUTHSHIRE AND SOUTH WALES.

June 8.—Things look as gloomy as ever, and the Whitsun holidays intervening this week have had the effect of further restricting operations. Not that wages are such as to warrant those engaged in the staple trades in going holiday-making, but both ironworkers and colliers are loth to depart from what has long been the custom. Taking the iron trade on the whole, there has been no noticeable improvement, although it is gratifying to see that a cargo of iron has been at last sent to a Russian port. The Baltic ports generally continue to be customers, and the colonial demand keeps some of the establishments going to a certain extent. Trade, however, is very bad, and orders do not arrive with any more freedom; in fact, taking one establishment with another, it is doubtful whether the works are employed more than half-time. A correspondent to one of the local daily papers has been writing in favour of an ironworkers' board of conciliation. Now wages differ so widely in the district a board of the kind would be doubtless acceptable to the men; but the real fact of the matter is that (as I have previously pointed out), so bad has trade become, masters do not care much whether they close their works or not. At the Landore Steel Works difficulties as to wages still exist, and in the Swansea district generally things are looking very depressed. At Cyfartha nothing is doing, but Dowlais still keeps on active operations amidst the general stagnation which surrounds it. Tin-plates are unaltered, so far as price is concerned.

To resume the subject of the Conciliation Board. It seems to have escaped the memory of some that the Conciliation Board of this district will ere long be called upon to give an award for the six months from July 1 to Dec. 31. This comes rather at an inopportune time, when the men have at length settled down under the terms of the present award. The colliers will hold a delegate meeting on Monday in order to elect six persons to represent them on the Conciliation Board, and where the important question of printing the shorthand writer's notes will be also considered. During last month the quantities of coal exported were larger than has been the case for some time. The output is also considerable, but still

the docks are full of coals awaiting shipment. Prices continue low. For house qualities there is no change to note. Patent fuel is rather a better sale.

Two instances of coal winning are reported—one at Ystradrhondda, on property belonging to the Ocean Steam Coal Company, and the other at Risca new pit, where the sinkers struck the grey vein.

The inquest held on the bodies of the two men who were killed in the shaft of a pit being sunk at Ferndale by an explosion of gas has terminated. The verdict was tantamount to one of accidental death, and no blame was attached to anyone. Another fatal accident occurred the other day at the Ton Colliery, Ystrad, Rhondda Valley, where an assistant hitcher was killed by a descending carriage.

Four colliers have been fined at the Llanelly Police Court for breach of contract, in leaving work without notice at the Llangennech Colliery Company's pit. A dispute arose between the men and the manager as to cutting prices, and defendants and about 50 other colliers left work. Operations were thus stopped.

The coal trade at New Tredegar is just now much depressed, and notices to terminate contracts at the end of the present month have been given to the men employed in the Powell Duffryn Company's pits. No slight uneasiness is felt at this, and the matter is believed to have some relation to the approaching termination of the Conciliation Board's award. In other instances similar notices have been given.

A baller from Tondu, named Thomas, has been charged at the Bridgend Police Court with embezzling the sum of 40*l.* 11*s.*, while secretary of the local branch of the National Amalgamated Association of Iron, Steel, and Brass Furnace workers. Prisoner was remanded till Saturday, and it was stated that he had admitted appropriating the money.

REPORT FROM THE FOREST OF DEAN.

June 8.—There is little of an interesting or of an encouraging nature to report since our last communication. The Cinderford furnace men, instead of resisting the inevitable, submitted to a reduction, and continued work. St. Annalls Mine was shut down and ceased work some days since, and the men at Buckshaft Mine have to face a further reduction, and the Sawdley and Parkend men are only continued on short arrangements, so as to be easily adjusted to unforeseen circumstances as events reveal themselves.

The tin-plate workers at Lydney and Lydbrook are in a state of contention, not being willing to submit to further reduction, except a minority of the Lydney hands, who are said to be willing to meet their masters more than halfway by accepting 7½ per cent. reduction, but at last advices the dispute was unsettled, and the majority still defiant. The contracts with the Lydbrook tin-plate men will terminate just over Midsummer without a fresh understanding with their employers, and should not that eventuality be realised, the stoppage of the works will throw out of employment between 300 and 400 hands.

The Coal Trade continues exceedingly slack, the men having scarcely half time—in many instances not averaging half-time; and some are of opinion that a reduction in the prices of coal would not improve the trade. We recently inadvertently mis-quoted prices in a report; but the following figures, we believe, may be depended upon:—Coals to the merchants ranging from 10*s.* to 12*s.* per ton, according to quality; and to the country trade from 10*s.* to 12*s.* 6*d.* and 13*s.*, according to quality and locality.

The Mid-Forest Railway Bill has been read a third time and passed. This line is a short one, intended to connect a few of the central collieries with the Severn Railway bridge, now in course of construction, and so place Sharpness new docks within easy and almost ready access. This object is undoubtedly an important one, and the line properly constructed and its arrangements wisely managed, it will become a valuable and profitable outlet for Forest produce. Notwithstanding the bad times—and they press heavily upon many—people find means for amusements—fetes, races, &c., being well patronised, yet the "pinch" goes on, one evidence being the numerous instances in which house and other properties is being offered for sale.

THE SCOTCH MINING SHARE MARKET—WEEKLY REPORT AND LIST OF PRICES.

During the past week the market has again been inactive. In shares of iron and coal concerns, Shotts are offered at a reduction of 5*l.*, and Cairntable, 1*l.* On the other hand, Bolckow, Vaughan, A, has improved ¼, Marbella ⅛, and Monkland 2*s.* Bilson and Crump, 8, sellers; Bolckow, Vaughan, B, 38; Brynmawr, 8, sellers; Chapel House, 2¾, buyers; Chillington, 3 to 4; New Sharlston, 4. Landore Siemens Steel 6 per cent. debentures offer at 100. The Scottish Australian sales for the month of March have been 16,544 tons. In shares of foreign copper concerns, Cape 1 higher, and Huntington 3*s.* lower; others unchanged. Panulcillo is 1¾ to 2. Rio Tinto 5 per cent. Bonds, 57 to 59. San Pedro 1¼ to 1¾. Yorke Peninsula (ordinary) firm at 6*s.* 3*d.* to 8*s.* 9*d.*; another satisfactory report is to hand this week from the properties. In home mines, prices lower. Glasgow Caradon down 2*s.* 9*d.*; the next sale is computed 260 tons, last month 250 were sold; and in the corresponding months of 1875 and 1874, 250 and 240 respectively. There will not be any interim dividend this year, owing to the water interfering with the workings in the North Hendre Mine; lead, however, is being got all the while, though the expenses are exceptionally heavy. Aberdaunant, 13*s.* 6*d.*, buyers. Bedford United, ⅞. Cargoll, 3¾ to 4. Frank Mills, ½. Gawton, ⅜. Glenroy, 7¼. Glyn, 3 to 3¼. Great Vor, ⅜, buyers. Great Dvliffe, 4 to 4½. Great Wheal Eleanor, 2, sellers. Gunnislake (Clitters), 2 to 3. Hingston Down, 7*s.* 6*d.* to 10*s.* Killifreth, 17*s.* to 19*s.* Llanwrst, 1⅝. Marke Valley, 2 to 2½. New Pembroke, ⅝. North Laxey, ⅞, buyers. Parys Mountain, 19*s.*, buyers. Pennerley, 2⅛ to 2¾. Penstruthal, 14*s.* to 16*s.* West Tankerville, 1⅞ to 2; preference, 2⅛ to 2¾. West Tolgus, 66 to 68. Wheal Crebor, 2 to 2¼. In shares of gold and silver mines, Richmonds have risen 1½, Flagstaff ⅛, and Emma 1 16th. The Richmond run is again 840,000. Cedar Creek, ⅛ to ⅝. Colorado Terrible, 1¼ to 1⅝. Chontales, 7*s.* 6*d.* to 8*s.* Don Pedro, 3*s.* 9*d.* to 5*s.* Eberhardt and Aurora, 8¼ to 9. Frontino and Bolivia, 2 to 2¼. Javali, 6*s.* 3*d.*, buyers. New Zealand Kapanga, ½ to 1. Pestarena United, 5*s.* 6*d.*, sellers. Port Phillip, 6*s.* 3*d.* to 8*s.* 3*d.* South Aurora, 8*s.*, buyers. Sweetland Creek, 1¼, sellers. Tecoma, ½ to ¾. In shares of oil companies, Dalmeny might realise ⅛ over list price, and Uphall also wanted. Young's Paraffin, ⅛ higher; the annual report has been issued, and will be found elsewhere. In miscellaneous companies' shares, London and Glasgow Engineering, &c., have been done at last price, while Scottish Wagons are raised ⅜, and new shares ¼. Birmingham Wagon preference is wanted at 12½, and the new shares offer at 5 prem. British Agricultural has been sold at 20*s.* for 5*l.* paid; while Hopkins, Gilkes and Co. is a point better at 2½ to 3. Details of the several days' business, &c, follow:—

On THURSDAY last market idle. Arniston, 6⅞ to 7¼. Cairntable, 8, sellers. Cargoll, 4 to 4½. Chontales, 7*s.* 6*d.* to 8*s.* 9*d.* Chapel House, 3 to 3¼. Dalmeny Oil, 5 to 5¼. East Tywarnhaile, 4½, sellers. Emma, 1½, buyers. Glasgow Caradon done at 27*s.* and 28*s.* 6*d.*, closing 28*s.* to 27*s.* Huntington, 5*s.*, sellers. Old Treburgett done at 7*s.* 6*d.* Parys Mountain, 17*s.* 6*d.* to 18*s.* 3*d.* Pestarena United, 6*s.* 6*d.*, sellers. Port Phillip, ⅝ to 5-16ths. Rio Tinto, 5⅛ to 5¾. South Aurora, 8*s.* to 10*s.* Tharsis done at 19 ⅝, closing 19½ to 19⅝; new shares done at 13⅜, closing 13¼ to 13⅜. West Tankerville, 36*s.* 3*d.* to 38*s.* 9*d.*; preference shares, 2⅛, buyers. Yorke Peninsula (ordinary), 6*s.* 6*d.* to 7*s.* 6*d.* Young's Paraffin done at 9⅜, closing 9⅜ to 9½. Scottish Wagon, 10½ to 11; new shares done at 4¾, closing 4⅝ to 4¾.

On FRIDAY more business done. Arniston, 6⅞ to 7¼. Benhar done at 10 1-16th. Bolckow, Vaughan, A, done at 51 and 51⅛. Chapel House, 2½ to 3⅛. Chontales, 7*s.* 6*d.* to 8*s.* 9*d.* Eberhardt and Aurora, 7½ to 7¾. Emma, 1 to 1 1-16th. Glasgow Caradon done at 28*s.* Gunnislake (Clitters), 2 to 3. Huntington done at 5*s.*, closing 5*s.* 3*d.* to 5*s.* 6*d.* Parys Mountain, 17*s.* 6*d.* to 18*s.* 6*d.* Richmond 8½ to 8¾. Scottish Australian, 28*s.* 9*d.* to 33*s.* 9*d.* South Aurora, 8*s.* to 10*s.* Tankerville, 10½ to 10¾. Tharsis done at 19½, closing 19 7-16ths to 19 9-16ths; new shares done at 13⅜ and 13¾, closing 13½ to 13⅝. Upshall Oil done at 5¼. Yorke Peninsula (ordinary), 6*s.* 3*d.* to 7*s.* 6*d.* Young's Paraffin done at 9⅜ and 9 7 16ths, closing 9¾ to 9⅝. Scottish Wagon done at 10⅝, closing 10⅝ to 11.

On SATURDAY market again neglected. Aberdaunant, 12*s.* 6*d.* to 13*s.* 6*d.* Bolckow, Vaughan, A, 51 to 51⅛. Canadian Copper Pyrites, ⅛ to ¼. Chapel House, 2⅞ to 3⅛. Chontales, 7*s.* 6*d.* to 8*s.* 9*d.* Emma, 1 to 1⅛. Huntington done at 5*s.* Monkland, 37*s.* to 40*s.* Parys Mountain done at 18*s.* 3*d.* Pestarena United, 5*s.* 6*d.* sellers. Port Phillip, 5*s.* to 7*s.* 6*d.* Richmond, 8¼ to 8¾. South Aurora, ⅛ to ½. Sweetland Creek, 1¼, sellers. Tharsis done at 19 7-16ths, closing 19 7 16ths to 19⅝. Young's Paraffin, done at 9⅜ and 9*l.* 8*s.* 6*d.*, closing 9 7 16ths to 9⅜.

On MONDAY the market was more active. Aberdaunant, 13*s.* 6*d.*, buyers. Arniston, 6⅞ to 7¼. Bedford United, ⅞, sellers. Cedar Creek, ⅛ to ⅝. Chapel House, 2¼ to 3. Chontales, 7*s.* 6*d.* to 8*s.* 9*d.* Eberhardt and Aurora, 7¾ to 8. Emma, about 1. Frontino and Bolivia, 43*s.* 9*d.* to 46*s.* 3*d.* Glasgow Port Washington done at 2. Glyn, 3 to 3¼. Hingston Down, 7*s.* 6*d.* to 10*s.* 6*d.* Javali, 6*s.* 3*d.*, buyers. Llanwrst, 1½ to 1⅝. Marbella done at 2½. Pennerley, 2⅛ to 2¼. Penstruthal, ⅛ to ¼. Pestarena United done at 5*s.* 6*d.*, sellers over. Port Phillip, 6*s.* 3*d.* to 8*s.* 3*d.* Richmond opened at 8⅞, and improved to 9⅜, closing 9¼ to 9½. Scottish Australian, 28*s.* 9*d.* to 33*s.* 9*d.* Shotts, 48 to 53; new shares, 9½ to 10. Sweetland Creek, 1¼, sellers. Tharsis done at 19½, closing 19½ to 19⅝; new shares done at 13⅜, closing 13¾ to 13½. West Tankerville, 1⅞ to 2; preference shares, 2 to 2¼. Yorke Peninsula (ordinary), 6*s.* 3*d.* to 8*s.* 9*d.* Young's Paraffin done at 9 7-16ths and 9⅜, closing 9¾ to 9⅝. Scottish Wagon, 10¾ to 10⅞; new shares, 4¼ to 4⅜.

YOUNG'S PARAFFIN LIGHT AND MINERAL OIL COMPANY (Limited).—The directors' report, to be submitted to the twelfth general meeting of the company on June 16, states:—"The balance at credit of the profit and loss account is 45,814*l.* 3*s.*, out of which it is proposed to declare a dividend at the rate of 9 per cent. per annum, payable in equal proportions on June 23 and Dec. 22, 1876, less tax. This will absorb 43,796*l.* 8*s.*, leaving 2017*l.* 18*s.*, to be carried forward to the current year. The works and plant have been kept in a most efficient state, and the sum of 13,285*l.* 13*s.* 8*d.* has been expended on their maintenance and charged to revenue. The amount written off for capital depreciation during the past year has been 20,562*l.* 18*s.* 6*d.* The market prices for the chief products of the company having been lower during the past season than in any year since its formation, your directors consider that the financial results are gratifying. The stocks of materials on hand are larger than those of the previous year, but they have all been valued at very moderate prices. The increase is chiefly in shale, which it was considered desirable to store in quantity at the pits. The capital expenditure during the year (15,389*l.* 11*s.* 11*d.*) has been larger than was anticipated; but excepting 153*l.* 0*s.* 8*d.* expended on works for purification of streams at Addiewell and Bathgate, the new works will be productive of very great benefit to the company, either by further increasing the percentage of products or by diminishing the cost of working. The capital expenditure during the present year is estimated at 10,709*l.* In September last an agreement was entered into on behalf of the company with the various riparian proprietors in the neighbourhood of the River Avon and its tributaries, whereby the company, to avoid the expense of an action in the Court of Session, undertook to construct at Bathgate remedial works similar to those which are in operation at Addiewell for averting the pollution of streams. The cost at both works has been considerable, already amounting to 8346*l.* 13*s.* 11*d.*, with a probable further expenditure of 1700*l.*; but the pollution from shale products is so difficult to be dealt with, and the area of ground occupied by the works so extensive—125 acres—that the outlay was, in the circumstances, unavoidable. The west field of Westwood, near West Calder, consisting of about 100 acres of workable shale, has been leased for 21 years. The lower or Broxburn shales have been proved during the past year, and are now being worked at two places. The directors are glad to be able to announce that the yield per ton from these shales is fair, and that the cost of working is expected to be reasonable. At the present rate of consumption the quantity of shale now possessed or leased by the company is equivalent to about 40 years' supply. It was considered prudent to insure, to a much larger extent than heretofore, the works, stocks, &c., against fire, and this has been effected. The amount now insured with public offices is 134,253*l.*, and the company's own fund amounts to 72334*l.* 6*s.* 1*d.*"

YORKE PENINSULA MINING COMPANY (Limited).—The usual advices of the operations at this company's properties, dated April 19 last, are favourable. Capt. Anthony reports that the month then ended was, as regards both the opening of good ore ground and the regularity and permanent character of the 25 and 35, east of Hall's, the best month since he has known the mine; 76 tons of ore had been sold, realising net 742*l.* 1*s.* 6*d.* There were further 70 tons on hand ready for sale, and 70 tons more being prepared, which, together, would realise about 1300*l.* more.

SWEETLAND CREEK GOLD MINES (Limited).—The report just issued by this company is causing great disappointment. It appears the superintendent estimates that, with present facilities for washing, and a constant supply of water, the ground of probable value will be exhausted in 12 or 18 months. Considering that many people must have purchased the shares in the expectation of receiving dividends regularly, as the former reports encouraged a belief, the prospect now held out of an early termination of profits is felt to have been too long withheld. Perhaps the report, however, requires explanation, as the superintendent seems to have contracted for five years' water, and gone to some expense in getting a United States patent for the property. If no better face can be put on the affair than presently shown the concern would not seem to differ from many other American schemes which are now called hard names. If affairs are better than they appear such information should certainly be afforded promptly to deter transactions being entered into at the prices the shares have fallen to.

On WEDNESDAY market idle. Arniston, 6⅞ to 7¼. Cargoll, 3¾ to 4. Canadian Copper Pyrites, ⅛ to ¼. Chapel House, 2¾, buyers. Eberhardt and Aurora, 8¼ to 9. Emma done at 21*s.* 3*d.* Glasgow Caradon done at 25*s.*, closing 24*s.* to 26*s.* London and Glasgow Engineering, &c., done at 19. Marbella done at 50*s.*, closing 49*s.* to 51*s.* Omoa and Cleland, 27*s.* to 30*s.* Pestarena United, 5*s.* 6*d.*, sellers. Richmond opened at 9¼, and, after being done at 9⅜, fell to 9, closing 8¼ to 9. Shotts (new), 9½ to 10. South Aurora, 8*s.*, buyers. Sweetland Creek, 1¼, sellers. Tharsis done at 19½, closing 19 7-16ths to 19½; new shares done at 13⅜, closing 13⅛ to 13¾. Yorke Peninsula (ordinary), 6*s.* 3*d.* to 8*s.* 9*d.* Young's Paraffin, 9¾ to 9½. Scottish Wagon done at 10⅞; new shares, 4⅛ to 4⅜.

Subjoined are this week's quotations, &c., of mining and metal shares quoted on the Scotch Stock Exchanges:—

Capital. Per share.	Paid up.	Dividends. Rate per cent. per annum. Previous.	Last.	Description of shares.	Last price.
				COAL, IRON, STEEL.	
£ 10	£6	£10	£ 8½	Arniston Coal (Limited)	6⅞
10	10	14	9	Benhar Coal (Limited)	10 1-16
10	7	14	9	Ditto	7
100	40	12½	7½†	Bolckow, Vaughan, and Co. (Lim.) A.	51¼
10	10	10	10	Cairntable Gas Coal (Limited)	8
10	10	5	nil	Chillington Iron (Limited)	3⅞
32	29	7	½†	Ebbw Vale Steel, Iron, and Coal (Lim.)	10⅝
10	5	nil	nil	Fife Coal (Limited)	5
10	10	—	—	Glasgow Port Washington Iron & Coal (L)	2
10	10	—	—	Ditto Prepaid	2
10	10	—	—	Lochore and Capledrae (Limited)	7
10	10	5	nil	Marbella Iron Ore (Limited)	2½
10	10	5	nil	Monkland Iron and Coal (Limited)	37*s.*
10	10	7	7	Ditto Guaranteed Preference	4¼
100	100	nil	nil	Nant-y-Glo & Blaina Ironworks pref. (L)	30
6	5	15	nil	Omoa and Cleland Iron and Coal (Lim.)	29*s.*
1	1	15	15	Scottish Australian Mining (Limited)	1½
1	£8.	15	15	Ditto New	8*s.* 6*d.*
50	50	10	5	Shotts Iron	53
10	10	10	5	Ditto New, issued at 2½ prem.	10
				COPPER, SULPHUR, TIN.	
4	4	—	—	Canadian Copper Pyrites (Limited)	⅛
4	3	—	—	Ditto (£3 paid)	⅞
10	7	20*s.*	20*s.*	Cape Copper (Limited)	40
2	2	—	—	Dunsley Wheal Phœnix Tin (Limited)	1*s.* 6*d.*
1	1	15	15	Glasgow Caradon Copper Mining (Lim.)	1¼
1	18*s.*	15	15	Ditto New	1
10	9	—	5	Huntington Copper and Sulphur (Lim.)	¾
25*s.*	23*s.*	—	—	Kapunda Mining (Limited)	2*d.*
4	4	—	—	Panulcillo Copper (Limited)	2
10	10	6†	6†	Rio Tinto (Limited)	5¾
20	20	—	—	Ditto, 7 per cent. Mortgage Bonds	14
100	100	—	—	Do., 5 p. ct. Mor. Deb. (Sp.Con. Bds.)	53
10	10	nil	nil	Russian Copper (Limited)	2¼
10	10	25	25	Tharsis Copper and Sulphur (Limited)	19½
10	7	25	25	Ditto New	13¼
1	1	—	—	Yorke Peninsula Mining (Limited)	7*s.*
1	1	—	—	Ditto, 15 per cent. Guaranteed Pref.	⅞
				GOLD, SILVER.	
1	1	5	5	Australian Mines Investment (Limited)	8*s.* 9*d.*
20	20	—	—	Emma Silver Mining (Limited)	21*s.* 3*d.*
10	10	—	—	Flagstaff Silver Mining (Limited)	2½
5	5	—	—	Last Chance Silver Mining (Limited)	⅜
5	5	—	35	Richmond Mining (Limited)	9
				OIL.	
10	7	2½	5	Dalmeny Oil (Limited)	5
10	10	—	—	Uphall Mineral Oil (Limited)	5¼
10	8½	5	5	Young's Paraffin Light & Mineral Oil (L)	9⅞
				MISCELLANEOUS.	
50	25	15	15	London and Glasgow Engineering & Iron Shipbuilding (Limited)	19
20	14½	—	—	Peruvian Nitrate (Limited)	13
10	10	5	5	Scottish Wagon (Limited)	10⅞
10	4	5	5	Ditto New	4¼

† Interim. ‡ Per share.

Last day for this account June 12; settling day, June 15.

NOTE.—The above lists of mines and auxiliary associations is as full as can be ascertained, Scotch companies only being inserted, or those in which Scotch investors are interested. In the event of any being omitted, and parties desiring a quotation for them and such information as can be ascertained from time to time to be inserted in these lists, they will be good enough to communicate the name of the company, with any other particulars as full as possible.

J. GRANT MACLEAN, Stock and Share Broker.

Post Office Buildings, Stirling, June 8.

TECHNICAL EDUCATION WITHOUT COST.

Eleven years since one of the many worthy citizens of the United States appropriated the very handsome sum of $500,000, together with suitable grounds in South Bethlehem, to establish an educational institution in the rich and beautiful valley of the Lehigh, the original object of the founder—the Hon. ASA PACKER, of Mauch Chunk—being to afford the young men of the valley a complete technical education for those professions which had developed the peculiar resources of the surrounding region. It need scarcely be said that the institution of which this was the beginning is the now rapidly rising LEHIGH UNIVERSITY, wherein the students receive, altogether *without charge*, the best possible instruction in civil, mechanical, and mining engineering; chemistry, metallurgy, and construction, and in all needful collateral studies. That the utility of the institution might be extended to the utmost the provision for needful collateral studies has been very liberally interpreted. French and German were made important elements in the collegiate course; afterwards a School of General Literature was added, and tuition given in the ancient classics; and recently Sunday service has been opened in the College Chapel, and lectures on Psychology, and the Christian evidences are statedly delivered by the President. Retaining his interest in the welfare of the University, Judge Packer has just expended a considerable sum in the purchase of books and magazines, and has determined to erect, at large expense, extensive library and chapel buildings for the convenience of professors, students, and citizens.

The tuition is free in all branches and classes, and candidates from all parts of the world are admissible, provided only they can pass the entrance examinations; and that the gratuitous instruction offered may be within reach of the largest possible number, buildings have been erected in which students can have board, lodging, light, and firing for $5 a week, or $4½ when two occupy a room jointly, and it is intimated that even this can be reduced by students combining into clubs for board or mess. The subjects for admission are arithmetic, Davies' new Bourdon's algebra, and Legendre's geometry; spelling, geography, and English grammar; and the elements of Latin for those who design to pursue the course of general literature. No diploma is granted except to those who pass the examinations satisfactorily, and the schools are so arranged that each student can receive precisely that instruction which will best meet his requirements in the particular branch of industry to which he proposes to devote himself. The degrees of B.A., M.A., Engineer of Mines, C.E., Mechanical Engineer, and Metallurgist are conferred, and the payment of a few dollars for registration of the award is really the only amount which the student has to pay beyond that which he would incur for board and lodging were he residing elsewhere. The Lehigh University cannot fail to prove an exceedingly valuable institution, and it may be hoped that the example of its very liberal founder will be followed elsewhere.

COAL MINES REGULATION ACT, 1872.

EXAMINATION FOR MANAGERS' CERTIFICATES OF COMPETENCY.

DISTRICT UNDER THE CHARGE OF HENRY HALL, ESQ.,
H.M. INSPECTOR OF MINES.

NOTICE IS HEREBY GIVEN, that an EXAMINATION for MANAGERS' CERTIFICATES OF COMPETENCY, under the above-named Act, will be HELD on the 22nd day of June inst., and CANDIDATES INTENDING TO PRESENT THEMSELVES at such EXAMINATION must, on or before the 17th day of June, notify such intention to the Secretary of the Board of the above-mentioned District, from whom all information as to particulars can be obtained.

By order of the Board,
MASKELL WM. PEACE, Secretary,
19, King street, Wigan.

N.B.—Persons who do not reside within the district are equally eligible for examination with those who do.

COAL MINES REGULATION ACT, 1872.

EXAMINATION FOR MANAGERS' CERTIFICATES OF COMPETENCY.

DISTRICT UNDER THE CHARGE OF THOMAS WYNNE, ESQ.,
H.M. INSPECTOR OF MINES.

NOTICE IS HEREBY GIVEN, that an EXAMINATION for MANAGERS' CERTIFICATES OF COMPETENCY, under the above-named Act, will be HELD on the 29th day of June inst., and CANDIDATES INTENDING TO PRESENT THEMSELVES at such EXAMINATION must, on or before the 20th day of June, notify such intention to the Secretary of the Board of the above-mentioned District, from whom all information as to particulars can be obtained.

By order of the Board,
JOSEPH KNIGHT, Secretary,
Newcastle under-Lyme, Staffordshire.

N.B.—Persons who do not reside within the district are equally eligible for examination with those who do.

COAL MINES REGULATION ACT, 1872.

EXAMINATION FOR MANAGERS' CERTIFICATES OF COMPETENCY.

DISTRICT UNDER THE CHARGE OF LIONEL BROUGH, ESQ.,
H.M. INSPECTOR OF MINES.

NOTICE IS HEREBY GIVEN, that an EXAMINATION for MANAGERS' CERTIFICATES OF COMPETENCY, under the above-named Act, will be HELD on the 10th day of July, and CANDIDATES INTENDING TO PRESENT THEMSELVES at such EXAMINATION must, on or before the 24th day of June, notify such intention to the Secretary of the Board of the above mentioned District, from whom all information as to particulars can be obtained.

By order of the Board,
J. T. THOMAS, Secretary,
Winnall's Hill, near Coleford.

N.B.—Persons who do not reside within the District are equally eligible for examination with those who do.

IMPORTANT.

EXTRAORDINARY OPPORTUNITY for the PROFITABLE EMPLOYMENT of MONEY presented by the SHARES of the TALYBONT SILVER-LEAD MINING COMPANY (LIMITED).

Capital £30,000, in 30,000 shares of £1 each.

This mine (situate in the village of Talybont, seven miles from Aberystwith, in the county of Cardiganshire) has been worked for many centuries past, and has yielded millions of pounds worth of ore; and, from the immense quantity of virgin ground still remaining to be worked, doubtless many more millions will be extracted.

The historical associations of the property are both important and interesting. During one period of its history it was mainly incidental in providing Sir Hugh Myddelton with the vast riches he so generously expended on that great work which has immortalised his name—the introduction of the New River to the Metropolis. When King Charles established a Mint at Aberystwith Castle the silver was supplied from this mine. It was then being worked by a Mr. Bushel, and was so remunerative as to enable that gentleman to lend the King very large sums of money, besides still further demonstrating his loyalty by equipping an army that remained with the King until the time of his surrender, and in whose ranks were enrolled no fewer supporters than the miners belonging to the village of Talybont.

In the Exhibition of 1851 there was exhibited a single stone of silver-lead ore, weighing 1 ton 10 cwts., extracted from this mine, which was universally admitted to be one of the finest mineralogical specimens ever produced.

The sett is about one mile in length, and more than half a mile in width, situated in the heart of one of the richest mineral districts.

The mining operations are under the direction of Capt. Thos. Glanville, M.E., under whose management East Carn Brea, West Basset, and North Basset Mines made such immense returns, North Basset alone having given over £100,000 profit.

The Talybont Mine is only three miles from the railway station of Llanfihangel, on the Cambrian Railway; the River Lerry runs past the washing-floors, and affords ample water power the whole year round. Miners are abundant in the village.

Therefore the company possess local advantages rarely equalled and very conducive to the success of a mining company; but more important than such considerations is the fact that this property contains several ascertained and proved and valuable lodes of silver lead.

A mining company formed for the purpose of exploring an untried sett must always partake largely of the element of speculation. A considerable sum has to be expended in "dead" or unremunerative work; the erection of the machinery necessary, and a considerable time is occupied before the value can really be proved. The Talybont Company, however, suffers from no such infant-mining malady, for the existence of lead has been proved for centuries past, and thousands and thousands of tons extracted, and the sett being so extensive is not yet one-half worked. The dressing and crushing machinery is all erected and working perfectly. A deep adit level is driven three quarters of a mile, in which a railway is laid, besides many other levels of considerable length, the cost of driving which must have been enormous, and which are invaluable for future operations.

From the character of the present works such a vast deposit of ore may any day be met with as would increase the value of these shares enormously.

Taking into consideration the fact that the recent discoveries are in entirely "open" or new ground, it is almost impossible to over estimate their importance, and may fairly be regarded as one of the most valuable mineral discoveries ever made in Wales.

The shares of this company offer an investment for money such as is extremely rarely met with. It is no ordinary speculation, but the continuance of mining operations that for centuries have produced immense wealth, and whose prospects never more encouraging than at the present time.

The shares are fully paid up, so there is no further possible liability.

The following is a report by Captain Thomas Glanville, M.E., lately received by the Directors:—

Talybont Silver-lead Mine, May 11, 1876.

GENTLEMEN,—When appointed to the management of this mine I did not hesitate to say in my first report that I had never entered upon new duties so confident of great success—a re-mew what important statement when my 40 years' mining experience in various parts of the world is taken into consideration—and I have much pleasure in being able to state that recent operations have confirmed my opinion of the immense mineral wealth of the Talybont Mine.

The new shaft is now communicated with the level west of Deep Adit. This is a most important work achieved, as it renders available for working a large section of ground.

The shaft is sunk from surface on the course of an east and west lode 30 fms., producing about 1½ ton of silver lead per fathom.

From this shaft, 12 fms. from the surface, we have driven a level east 6 fms., in which the lode is over 3 ft. wide, and of the same productive character. We have also driven a level west with like success. We are now driving an intermediate level east and west with all possible dispatch.

The lode on which this new shaft is sunk is parallel with the enormously rich lode of ore previously extracted, and the matrix of the lode is identical, containing the same very rich gossan.

Now that the communication is effected, all the orestuff can be shot into the shaft and run direct out to the dressing-floors by means of the deep adit railway, thus saving all cost of cartage.

The property could not be better situated for economical working. We have ample water power at all seasons for driving our machinery—a most valuable consideration.

The crusher and jiggers have been supplied with new sieves and classifiers, and other alterations and improvements made, our machinery is working perfectly.

We are now dressing another parcel of ore for market.

From the appearance of the lodes at their present shallow depth, and their being in virgin ground, I must again say that I consider their present richness to be but a reflection of the vast deposit of metal we shall shortly meet with.

(Signed) THOMAS GLANVILLE.

Further particulars will be forwarded on application to HODGKINSON and Co., Share Dealers, 9, Great Winchester street, London, E.C.

FIVE HUNDRED SHARES, or any portion thereof, can now be had par, £1 per share, if applied for at once to HODGKINSON and Co., Share Dealers, 9, Great Winchester-street, London, E.C.

MESSRS. W. J. TALLENTIRE AND CO.,

STOCK AND SHARE BROKERS.
20, CHANGE ALLEY, CORNHILL, LONDON, E.C.,

Transact business in Stock Exchange Securities and Mining Shares of every description, either for immediate cash or the usual bi-monthly settlements, and also advise personally or by letter to executors, trustees, capitalists, and investors generally on the selection of Securities for safe and profitable investment, their knowledge of the markets, extending over a period of more than sixteen years, combined with special facilities for acquiring information, enabling them to act promptly for clients.

They have established Corresponding Agencies in all the principal towns of the United Kingdom, and are prepared to deal in the various local Stocks and Shares at market prices. Orders per post or telegraph receive prompt attention.

INVESTORS SHOULD APPLY for a copy of Messrs. W. J. TALLENTIRE and CO.'s Circular, SENT POST FREE. It contains valuable information on Foreign Securities (especially South American, Egyptian, and Turkish), Railways, and Lead Mines.

In the Court of the Vice-Warden of the Stannaries.
Stannaries of Cornwall.

IN the MATTER of the COMPANIES ACT, 1862, and of the ROSEWALL HILL AND RANSOM UNITED MINING COMPANY.—Notice is hereby given, that a PETITION for the WINDING UP of the above-named company by the Court was, on the 3rd day of June instant, presented to the Vice-Warden of the Stannaries by Thomas Wallis Robinson, of Hayle, within the said Stannaries, accountant, the late purser or secretary of and also a shareholder in the said company, and that the said petition is directed to be heard before the Vice-Warden, at the Prince's Hall, in Truro, within the said Stannaries, on Monday, the 19th day of June instant, at Twelve o'clock at noon.

Any contributory or creditor of the company may appear at the hearing and oppose the same, provided he has given at least two clear days' notice to the petitioner, or his solicitors, of his intention to do so, such notice to be forthwith forwarded to P. P. Smith, Esq., Secretary of the Vice-Warden, Truro.

Every such contributory or creditor is entitled to a copy of the petition and affidavit verifying the same from the petitioner, or his solicitors, within 24 hours after requiring the same, on payment of the regulated charge per folio.

Affidavits intended to be used at the hearing, in opposition to the petition, must be filed at the Registrar's Office, Truro, on or before the 15th day of June instant, and notice thereof must at the same time be given to the petitioner, or his solicitors.

HODGE, HOCKIN, AND MARRACK, Truro, Cornwall
Dated Truro, June 6, 1876. (Petitioner's Solicitors.)

In the Court of the Vice-Warden of the Stannaries.
Stannaries of Cornwall.

IN the MATTER of the COMPANIES ACTS, 1862 and 1867, and of the BOSCASWELL DOWNS TIN AND COPPER MINES ASSOCIATION (LIMITED).—TENDERS will be RECEIVED by the Official Liquidator of the said Association, to be addressed to him at the Stannaries Court Office, in Truro, until the 17th day of June instant, stating the HIGHEST PRICE which will be GIVEN for the WHOLE or ANY PART of the undermentioned

MINING PLANT, MACHINERY, MATERIALS, AND EFFECTS

belonging to the said Association, and being at and upon the said Mines, in the parish of St. Just-in-Penwith, within the said Stannaries:—

ONE 36 in. cylinder PUMPING ENGINE, 8 ft. stroke, with TWO BOILERS, 8 tons each.

ONE 34 in. PUMPING and STAMPING ENGINE, with fly-wheel, and TWO 8 ton BOILERS.

ONE 32 in. STAMPING ENGINE, 9 ft. stroke, equal beam, and two fly-wheels.

TWO STAMPS AXLES, with 32 heads, with frames, &c.

About 190 fms. of steel wire rope; a large hemp rope; 60 ft. shears, with 3 ft. shieves; tram wagon, and skip.

To inspect the above, apply to the Bailiff in charge at the Mines; and for further particulars to the said Official Liquidator, as above.

R. M. PAUL, Truro (Agent for Rogers and Son, Helston, Solicitors for the said Official Liquidator).
Dated Stannaries Court Office, Truro, 7th June, 1876.

FOREST OF DEAN, GLOUCESTERSHIRE.
IMPORTANT SALE OF VERY VALUABLE IRON MINES AND COLLIERY PROPERTIES.

MR. MICHAEL CLARK is instructed to SELL, BY AUCTION, at the Spread Eagle Hotel, Gloucester, on Thursday, the 15th day of June, 1876, at Three o'clock in the afternoon precisely (subject to conditions of sale to be then produced), the following VERY VALUABLE

IRON MINE AND COLLIERY PROPERTIES:—

The SOUTH WALES IRON MINE, with an area of 400 acres, or thereabouts.

The TICHBORNE IRON MINE, with an area of 530 acres, or thereabouts.

All that Tract of COAL, known as HOPEWELL ENGINE, MAPLEFORD ENGINE, and MILES'S LEVEL COLLIERIES, comprising an area of 140 acres, or thereabouts, of the Trenchard veins of coals. Two pits are sunk to the first of these veins on the Hopewell Engine.

NASH'S FOLLY COLLIERY, comprising 70 acres, or thereabouts, of Trenchard veins of coal. A pit has been sunk a depth of 25 yards.

MILKWALL COLLIERY, comprising 32 acres, or therabouts, of the Trenchard veins.

GORSTY KNOWLE COLLIERY, comprising 90 acres, or thereabouts, of the Trenchard veins.

Also, will be SOLD, a good 14 horse power BEAM ENGINE, in good working order (without boiler), together with pit framing, &c.

The Severn and Wye Railway runs over and in close proximity to the above properties, which are situated between Parkend and Coleford.

To view the above properties, apply to Mr. GEORGE OLDLAND, Saunder's Green House, Whitecroft, near Lydney, Gloucestershire; and for further particulars and to inpect plans to Mr. W. ROBERTS, Jun., Solicitor, Coleford; or to the Auctioneer, 1, Bristol Chambers, Nicholas-street, Bristol.

IMPORTANT SALE OF A GOING CONCERN.

PEDN-AN-DREA UNITED MINES.

MR. A. BERRYMAN is instructed by the Committee of Management TO SELL, BY AUCTION, on the Mines, at Redruth, Cornwall, on Friday, the 23rd June instant, at Twelve for One o'clock, the UNEXPIRED TERMS of the LEASES of the above-named valuable TIN MINES, together with the PLANT, MACHINERY, and EFFECTS, as a GOING CONCERN. The plant includes—

ONE 70-in. PUMPING ENGINE, and four boilers.
ONE 22-in. horizontal WHIM ENGINE, two boilers, and cage.
ONE 12 in. ENGINE and STONE BREAKER.
ONE 32 in. STAMPING ENGINE, and three boilers, and 48 heads of stamps, axles, &c.; one portable engine; one old boiler; about 250 fms. wire ropes, pulleys, stands, &c.; about 2 fms. whim chain; about 150 fms. of pumps and pitwork; launders, &c.; skips, wagons, and miners', smiths', and carpenters' tools, &c.

There are on the mine—Sheds over stone breaker and dressing floors, carpenters' shop, smiths' shop, sampling house, tin dressing house, arsenic and dressing house, saw house and pit, substantial account house.

The mine is in full working order, and has made very large returns of tin. The monthly sales at present are about 20 tons of tin.

A full inventory may be seen, and particulars of leases and conditions of sale obtained on application to Mr. A. BERRYMAN, Auctioneer, Penzance; Captain TREGAY, on the Mines, Redruth, Cornwall; or at the offices of the company.

8, Austinfriars, London.

IN LIQUIDATION.

CLYNE AND LOWER RESOLVEN COLLIERIES, NEATH, GLAMORGANSHIRE.

MESSRS. FULLER, HORSEY, SON, AND CO. are instructed by the Liquidator of the Welsh Steam Coal Collieries Company (Limited) to SELL, BY AUCTION, on the Premises, Clyne and Lower Resolven Collieries, near Neath, on Tuesday, June 27th and following day, at Twelve o'clock precisely, in lots, the nearly new

FIXED PLANT AND MACHINERY,

LOOSE TOOLS, UTENSILS, and STORES, including a new 400-horse power high and low pressure STEAM ENGINE (see following advertisement); two pairs high pressure WINDING ENGINES, by Galloway and Fletcher and Sons, with cylinders 18 and 12 diameter; a high pressure horizontal PUMPING ENGINE, with 24 in. cylinder; two horizontal and vertical ENGINES; beam STEAM ENGINE, with 20 in. cylinder; five Galloway's patent BOILERS, nearly new, 6 ft. 6 in. diameter, 26 ft. long; three STEAM BOILERS; powerful capstan drum, equal to 40 tons; capstan; seven winding drums; rope pulleys and frames; ventilating fan; donkey pump; hydraulic pump, by Hathorn Davis and Co.; Niagara and universal steam pumps, by Hayward Tyler and Co.; five double purchase crabs; a nearly new 14 horse power double cylinder portable ENGINE, by Clayton and Shuttleworth; cast iron mortar mill, with 7 ft. pan; circular saw bench; 20 tons mining gear; 48 tons new cast iron pipes; 128 tons cast iron pipes and fittings; 12 tons cast iron water pipes; 35 new permanent way rails, with points and crossings; 104 tons tram rails; 6240 timber sleepers; a 20 ton railway wagon weighbridge, Hind's patent, by Kitchen; 12 tons New Staffordshire plate and bar iron; 4 tons steel wire rope; 1100 yards iron ditto; 2 tons chain; rotary coal screens; Tangye's 20 ton hydraulic jack; 7 tons wrought and cast scrap; 97 coal trams; smiths' and engineers' tools; 2 sets of Whitworth's screwing tackle; about 100 loads useful timber, deals and battens; 13,000 fire bricks; 2 useful horses, carts, harness; quantity of stores; 340 tons small coal; office fixtures, and numerous other effects.

There are sidings to both collieries from the Vale of Neath Railway, so that goods can be easily loaded into trucks.

May be viewed Saturday and Monday preceding, and mornings of sale, and catalogues had of HENRY WILSON, Esq., the Liquidator, Bartholomew House, Bartholomew-lane, E.C.; of Messrs. MILLER and MILLER, Solicitors, 5 and 6, Sherborne-lane, E.C.; at the Castle Hotel, Neath; at the Collieries; and of Messrs. FULLER, HORSEY, SON, and Co., 11, Billiter-square, London, E.C.

IN LIQUIDATION.

CLYNE AND LOWER RESOLVEN COLLIERIES, NEATH.

MESSRS. FULLER, HORSEY, SON, AND CO. will INCLUDE in their SALE on Tuesday, June 27, a new 400-horse power differential, expansive, direct horizontal, compound, high and low pressure PUMPING ENGINE, by Hathorn, Davis, Campbell, and Davey (Davey's patent), with cylinders steam jacketed, 34 in. and 64 in. diameter, 7 ft. 6 in. stroke.

May be viewed, and further detailed particulars contained in catalogues, which may be had as in preceding advertisement.

SALE, in One Bid, in the Chamber of Notaries of Paris, on the 4th of July, 1876, of the

COAL PITS OF ROUJAN.

A Station on the Southern Railway (Chemin de Fer du Midi), arrondissement of BEZIERS (HERAULT).

Area about 45 kilometres (nearly five eighths of a mile each).

Upset price, 800,000 francs (£32,000).

Apply on the spot to the Engineer of the Mine; and in Paris to M. FOVARD or Mr. TURQUET, Notaries.

FOR SALE:—

A 40 in. CORNISH BEAM PUMPING ENGINE, 9 ft. stroke in cylinder, and 7 ft. in shaft (by Perran Foundry Company), in good condition.

THREE 30 ft. by 6 ft. 6 in. SINGLE-FLUED BOILERS, with all fittings complete—one of the above nearly new.

ONE 12 in. cylinder HORIZONTAL STEAM CAPSTAN, with drawing gear and drum complete, is equal to new.

Price for the lot as they stand, £480.

Apply—

JAMES PAYNE, WREXHAM.

MANGANESE AND SULPHUR ORES.

MESSRS. BROWN, BUTLER, AND CO., MINERAL MERCHANTS, AGENTS, AND BROKERS,
Are OPEN to TREAT for the PURCHASE of LARGE QUANTITIES of the ABOVE or other MINERALS, to be delivered in Liverpool. Particulars, naming quality and price, will receive immediate attention.

Address, Brockley Buildings, 51, South John street, Liverpool.

SILVER-LEAD MINE.
TO FINANCIERS AND SPECULATORS.

FROM £3000 to £4000 are REQUIRED to DEVELOPE a MINING PROPERTY, which at the depth attained has proved unusually rich for Silver-Lead.

To inspect, and for full particulars, address "X.," MINING JOURNAL Office, 26, Fleet-street, London.

SPELTER WORKS.

TO BE SOLD, the LEASE and PLANT of the UPPER WORKS, BAGILLT, FLINTSHIRE, extending over about TWENTY-SEVEN ACRES of LAND; also about FOUR AND A QUARTER ACRES of FREEHOLD LAND, and one undivided third part or interest in the DEE BANK WHARF, adjoining the said freehold.

The plant is at present sufficient for the production of 30 tons of spelter per week and may easily be increased (the greater part of the land being let off for farming); there are extensive buildings for storing blende, and heated rooms for making and storing retorts.

The works are now in operation, and with a production of only about 11 tons of spelter per week considerable profit has been realised during the last two years. There are several collieries in operation in the immediate neighbourhood, and the works are within easy reach of the North Wales blende-producing mines.

The freehold land above mentioned almost adjoins the leasehold property, and is bounded on three sides by a large colliery, the Dee Bank Wharf named above, and the River Dee respectively. It is traversed by the Chester and Holyhead Railway, and situated within a few hundred yards of the Bagillt Railway Station. The site is, therefore, an unusually favourable one for the erection of works.

Apply to H. C. CARVER, Llanidloes, Montgomeryshire.

THE NANT-Y-RONEN CONSOLS SILVER-LEAD MINING COMPANY (LIMITED).

TO BE SOLD, the LEASES of the EXTENSIVE MINING PROPERTIES of the NANT-Y-RONEN CONSOLS SILVER LEAD MINING COMPANY (LIMITED), which are situate about six miles from Aberystwith, on the main road to Devil's Bridge, and known as Nant-y-ronen and Twedrhiwfelen, and Llechweddmelyn.

The properties are held for an unexpired term of nineteen years, as to Nant-y-ronen, at a ground rent of £20, merging into a royalty of 1-16th; and as to Twedrhiwfelen and Llechweddmelyn at a like ground rent, merging into a royalty of 1-15th.

Large sums have been expended in sinking shafts and driving adits.

The ground contains fine gossan, blende, and lead ore, and it is believed the mines may be worked with every prospect of success.

Apply to W. E. FIELDING, Esq. (the Liquidator of the Company), 9A, Findlaters' Corner, London Bridge, S.E.; or to G. T. ROBINSON, Esq., Solicitor, Christchurch-passage, Newgate street, E.C.

TO CAPITALISTS OR PROMOTERS DESIRING TO MAKE MONEY.

TO BE SOLD, a COLLIERY ROYALTY in NORTH WALES, close to rail or shipping port; several shafts partially sunk; coal fully proved of FOUR SEAMS of good HOUSE and STEAM COALS, in an area of upwards of 400 acres of surface. It adjoins the West Mostyn Coal Field, just successfully launched, where under seams (including Cannel) have been proved in addition to the above; so that eminent engineers state that the available coal in this royalty may be 88 feet thick.

Present holder will arrange to sell the entire to an individual or company for what it has cost him, dividing all profit made above, which, even in a normal state of the coal trade, must be large. Certain and safe surveys by eminent Staffordshire and Welsh engineers have already been made.

Address, "Nil Desperandum," care of Mr. Watson, 15, Fenwick-street, Liverpool,

LEAD MINE NEAR CARSPHAIRN, STEWARTRY OF KIRKCUDBRIGHT.

TO BE LET, with immediate entry, and for such number of years as may be agreed upon, the

WOODHEAD LEAD MINE,

On the Craigengillan Estate, situated in the parish of Carsphairn and Stewartry of Kirkcudbright.

This mine was opened in 1838, has been wrought ever since, and has yielded a large quantity of lead of the finest quality. The plant, machinery, &c., can be had at a valuation.

JAMES M'CALL, at the Mine, will show the underground workings, as also the plans and sections; and for further particulars application may be made to ALEXANDER M'CUBBIN, Solicitor, Ayr; or to Mr. THOS. SMITH, Land Steward, Berbeth Mains, Dalmellington, Ayrshire.

Ayr, May, 1876.

FOREST OF DEAN.

VALUABLE IRON MINES FOR SALE.—Some opened and in good working order, others partially developed.

TWO LARGE COLLIERIES FOR SALE.

Reliable information upon Forest of Dean Investments.

WM. HENDERSON, Mining Engineer, Newnham.

SULPHATE OF BARYTES FOR SALE.—Fine powdered, beautifully white; also in the Rock or Crude State, free from Lime and Metallic Oxide.

Samples on application to—

RUTHWAITE BARYTES MINING COMPANY,
Nov. 17, 1875. WHITEHAVEN.

FOR SALE, a 35-horse power PORTABLE STEAM ENGINE, with link motion reversing gear, ready for delivery.

An 18-horse power VERTICAL STEAM ENGINE, with link motion reversing gear, also gear to wind and pump.

A 9 ft. PAN MORTAR MILL, VERTICAL ENGINE, and BOILER.

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THE UNDERMENTIONED STOCK OF SUPERIOR SECOND-HAND STEAM ENGINES, &c.:—

ONE 50 in. cylinder CORNISH PUMPING ENGINE, 10 ft. stroke in cylinder, with or without TWO BOILERS of 10 tons each.

ONE 40 in. cylinder CORNISH PUMPING ENGINE, 10 ft. stroke.

ONE 36 in. cylinder CORNISH PUMPING ENGINE, 8 ft. stroke.

ONE 28 in. cylinder ROTARY ENGINE, 8 ft. stroke, with TWO FLY WHEELS.

ONE 24 in. cylinder ROTARY ENGINE, 8 ft. stroke, with FLY WHEEL of 10 tons, and winding drum.

ONE 22 in. cylinder ROTARY ENGINE, 6 ft. stroke, with PUMPING GEAR attached.

ONE 24 in. HORIZONTAL CONDENSING ENGINE, 6 ft. stroke, geared for pumping and winding, and BOILER 9 tons.

ONE 10 in. HORIZONTAL CONDENSING ENGINE, geared for pumping and winding, and BOILER 5 tons.

ONE 12-horse power PORTABLE ENGINE, with pumping gear, FOR SALE OR HIRE.

Also a LARGE STOCK OF PUMP-WORK, from 6 to 20 inches in diameter, ENGINE BOILERS, STRAPPING PLATES, BALANCE BOBS, CHAINS, WINCHES, STAMPS AXLES, and other articles in general use in Mines, Collieries, &c.

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Messrs. TREDINNICK and Co., 79, Cornhill, London, E.C.

THE MINING SHARE LIST.

BRITISH DIVIDEND MINES.

Shares.	Mines.	Paid.	Last wk.	Clos. Pr.	Total divs.	Per share.	Last paid
[illegible]	Alderley Edge, c, Cheshire*	10 0 0	—		12 11 8	0 5 0	Jan. 1876
15000	Balmynheer, t, Wendron (4000 to is.)	1 0 0	—		0 2 0	0 2 0	Nov. 1875
[illegible]	Bampfylde, c, i, mn., Devon*	1 0 0	1¾	1½ 1¾	0 2 0	0 2 0	June 1873
300	Botallack, t, c, St. Just§	116 5 0	55	45 50	619 15 0	5 0 0	Aug. 1872
4000	Brookwood, c, Buckfastleigh	1 16 0	2⅝	1¾ 2	3 16 0	0 2 0	Nov. 1875
[illegible]	Cargoll, s-l, Newlyn§	6 2 0	—		4 16 3	0 12 6	Oct. 1872
6400	Cashwell, l, Cumberland*	2 10 0	—		1 7 6	0 2 0	Aug. 1875
1000	Carn Brea, c, t, Illogan†	35 0 0	38	36 38	308 0 0	1 0 0	Feb. 1874
[illegible]	Cath. & Jane, l.* Penrhyndendraeth	5 0 0	—		0 7 6	0 7 6	June 1873
2450	Cook's Kitchen, t, Illogan†§	22 9 9	4¼	5 6	11 17 0	0 7 6	Jan. 1873
1024	Devon Gt. Consols, c, Tavistock†* §	1 0 0	3½	3 3½	116 10 0	0 12 0	May 1872
4296	Dolcoath, c, t, Camborne	10 14 10	37	35 37	109 18 9	0 7 6	May 1876
6500	Drake Walls, t, c, Calstock	6 0 0	1	¾ 1	0 2 0	0 2 0	July 1874
15000	Duchess of Westminster,* l, Holywell	1 0 0	—		0 3 0	0 2 0	Feb. 1876
[illegible]	East Balleswidden, t, Sancreed*	1 0 0	—		0 2 11	0 0 5	Feb. 1874
6144	East Caradon, c, St. Cleer†	2 14 6	1¾	1⅜ 1⅝	14 19 0	0 2 0	Oct. 1872
300	East Darren, l, Cardiganshire	32 0 0	—		234 10 0	1 0 0	May 1876
6400	East Pool, t, c, Illogan	0 9 9	13¼	13 13½	14 12 3	0 2 6	May 1876
1906	East Wheal Lovell, t, Wendron*‡§	6 19 0	2½	2 2½	20 7 6	0 7 6	Oct. 1874
2800	Foxdale, l, Isle of Man*†	25 0 0	—		82 5 0	0 10 0	Feb. 1876
40000	Glasgow Cara., c* [30,000 £1 p., 10,000 15s. p.]		1¼	1 1¼	0 11 10	0 2 0	Jan. 1876
15000	Great Dyliffe,* l, Montgomeryshire	4 0 0	5	4 4½	0 2 6	0 2 6	Apr. 1876
15000	Great Laxey, l, Isle of Man*	4 0 0	17½	17 17½	19 13 0	0 10 0	Apr. 1876
615	Great Retallack, l, bl, Perranzabuloe	5 18 6	2½	2 2¼	0 1 6	0 1 6	May 1876
15000	Great West Van, l, Cardigan*	2 0 0	⅜	⅛ ⅜	0 2 0	0 1 0	Aug. 1874
5908	Great Wheal Vor, t, c, Helston†§	41 2 6	1½	¼ ¾	15 18 6	0 2 6	June 1872
6400	Green Hurth, l, Durham*	0 6 0	—		1 12 0	0 4 0	Oct. 1874
20000	Grogwinion, l, Cardigan*	2 0 0	7	5 6	0 5 6	0 2 6	Jan. 1876
[illegible]	Gunnislake (Clitters), t, c	5 5 0	3¼	2½ 2¾	0 10 9	0 2 0	Mar. 1876
1024	Herodsfoot, l, near Liskeard†	8 10 0	4½	4 4½	62 5 0	0 15 0	Oct. 1872
16000	Hingston Down, c, Calstock*† (£1 sh.)	2 5 0	⅞	¾ ⅞	4 4 0	0 1 0	Nov. 1875
25000	Killaloe, sl, Tipperary	1 0 0	—		0 3 11½	0 0 6	Mar. 1873
400	Lisburne, l, Cardiganshire	18 15 0	60	55 60	572 10 0	1 0 0	Mar. 1876
14000	Llanidloes,* l, Montgomery	3 0 0	3½	3 3½	7½ per cent.		Nov. 1875
[illegible]	Lovell, t, Wendron	0 10 0	—		0 17 6	0 1 6	Jan. 1874
4000	Marke Valley, c, Caradon*	5 0 6	2⅛	2 2¼	7 15 0	0 2 0	Jan. 1876
11000	Melindur Valley, l, Cardigan*	3 0 0	—		0 7 2	0 3 7	Jan. 1875
8000	Minera Mining Co., l, Wrexham*	5 0 0	12	10 12	64 16 2	0 6 0	May 1876
20000	Mining Co. of Ireland, cl, c, l*	7 0 0	⅝	½ ⅝	23 11 6	0 3 6	Jan. 1876
512	North Busy, c, Chacewater	3 9 6	[illegible]	2 2½	0 10 0	0 10 0	Dec. 1875
12000	North Hendre, l, Wales	2 10 0	—		1 2 6	0 2 6	Nov. 1875
2000	North Levant, t, c, St. Just§	12 2 0	—		4 13 0	0 12 0	Sept. 1873
27855	Old Treburgett,* s-l, ordinary shares	1 0 0	—		0 0 9	0 0 9	Feb. 1874
9258	Old Treburgett,* s-l (10 per ct. pref.)	0 10 0	½	⅜ ½	0 1 4½	0 0 6	July 1874
5000	Penhalls, t, St. Agnes	3 0 0	1½	1 1½	3 13 6	0 2 0	July 1875
45793	Penstruthal, t, c, Gwennap	2 0 0	¾	¾ ⅞	0 2 8	0 0 8	Nov. 1875
6000	Phœnix, t, c, Linkinhorne§	4 13 4	—		39 19 10	0 4 0	Nov. 1872
18000	Prince Patrick,* s-l, Holywell	1 0 0	2¼		0 14 0	0 1 3	Jan. 1876
1120	Providence, t, Lelant†§	17 16 7	2½	2 2½	104 12 6	0 10 0	Sept. 1872
12000	Roman Gravels, l, Salop*	7 10 0	15½	15 15½	6 4 6	0 8 6	May 1876
512	South Caradon, c, St. Cleer	1 5 0	120	110 115	728 0 0	2 0 0	May 1876
6123	South Condurrow, t, c, Camborne‡	6 5 6	4¼	4 4¼	1 18 6	0 3 6	June 1876
10000	So. Pr. Patrick,* s-l (8000 sh. issued)	1 0 0	—		0 7 0	0 1 0	Oct. 1875
12000	Tankerville, l, Salop*	6 0 0	11	10½ 11	4 7 0	0 5 0	May 1876
6000	Tincroft, c, t, Pool, Illogan†	9 0 0	19	18 19	49 8 6	0 5 0	May 1876
15000	Van, l, Llanidloes*	4 5 0	39	36 38	17 9 6	0 16 0	Mar. 1876
8000	W. Chiverton, l, Perranzabuloe†	12 10 0	18	17 18	54 0 0	0 10 0	Apr. 1876
1783	West Poldice, St. Day	10 0 0	—		1 14 0	0 4 0	Feb. 1876
512	West Tolgus, c, Redruth	95 10 0	66	67 69	13 10 0	1 5 0	Apr. 1876
2048	West Wheal Frances, t, Illogan	27 3 9	8	7 8	3 12 6	0 5 0	Oct. 1872
12000	West Wye Valley,* l, Montgomery	3 0 0	4¼	3¾ 4	0 3 0	0 3 0	May 1876
512	Wheal Basset, c, Illogan†§	11 2 6	11	15 20	638 10 0	1 10 0	Aug. 1872
2048	Wheal Jane, t, Kea	2 13 10	1¼	1 1¼	8 5 0	0 5 0	July 1875
4295	Wheal Kitty, t, St. Agnes	5 4 6	2½	2 2½	11 19 6	0 2 6	Dec. 1874
80	Wheal Owles, t, St. Just§	86 5 0	—		522 10 0	4 0 0	Aug. 1872
6000	Wheal Prussia, t, Redruth	2 0 0	—		0 3 0	0 2 0	Dec. 1875
25000	Wicklow c, sul, t, Wicklow	2 10 0	1⅞	1¾ 1⅞	52 9 0	0 2 6	Mar. 1872
10000	Wye Valley, l, Montgomery*	3 0 0	7½	6½ 7	0 6 0	0 3 0	Aug. 1875

FOREIGN DIVIDEND MINES.

Shares.	Mines.	Paid.	Last wk.	Clos. Pr.	Total divs.	Per share.	Last paid
85500	Alamillos, l, Spain*†	2 0 0	2½	2 2½	1 12 3	0 2 6	Mar. 1876
30000	Almada and Tirito Consol., s*†	1 0 0	⅜	⅛ ⅜	0 6 3	0 1 0	May 1876
20000	Australian, c, South Australia†	7 7 6	2	1½ 2	0 15 6	0 2 0	July 1875
10000	Battle Mountain,* c, (6240 part pd.)	5 0 0	1	½ ¾	0 10 0	0 10 0	Nov. 1872
15000	Birdseye Creek, g, California*	4 0 0	1¾		0 14 0	0 2 6	June 1874
6000	Bensberg, l, Germany*	10 0 0	2	1¼ 1½	0 17 4	0 8 0	July 1873
12320	Burra Burra,* c, So. Australia	5 0 0	—		70 0 0	0 10 0	Oct. 1872
[illegible]	Cape Copper Mining,*† So. Africa	7 0 0	40	39 41	24 15 0	1 0 0	June 1876
4000	Cedar Creek, g, California*	5 0 0	¾		0 5 0	0 2 6	June 1873
3000	Central American Association*†	0 16 6	—		0 6 0	0 1 0	July 1869
15000	Chicago, s, Utah*	10 0 0	6¼	6 6¼	2 0 0	0 4 0	May 1876
21000	Colorado Terrible, s-l, Colorado*†	5 0 0	1¾	1¼ 1¾	0 13 6	0 4 0	Jan. 1875
10000	Copiapo, c, Chili* (£20 shares)	16 15 0	—		7 8 5	0 2 6	Jan. 1876
60000	Don Pedro North del Rey*†	0 16 0	¾	⅛ ⅜	2 5 9	0 2 0	Mar. 1872
23500	Eberhardt and Aurora, s, Nevada*†	10 0 0	8	8¾ 9	1 0 0	1 0 0	July 1871
50000	Emma,* g, s, Utah	20 0 0	1	¾ 1	3 12 0	0 6 0	Dec. 1872
70000	English and Australian, c† S. Aust.	2 10 0	1⅞	1⅝ 1⅞	2 18 9	0 2 0	Mar. 1876
15000	Ferguson, g, California*	2 0 0	—		0 3 0	0 3 0	April 1873
30000	Flagstaff, s, Utah*	10 0 0	2¼	1¾ 2¼	4 2 0	0 5 0	July 1873
25000	Fortuna, l, Spain*†	2 0 0	6	5½ 6	5 8 10	0 8 0	Mar. 1876
30000	Gold Run, hyd.	1 0 0	¾	½ ¾	0 2 4	0 0 4	Oct. 1872
68000	Kapunda Mining Co. Australia†	1 3 0	—		0 2 4	0 0 6	June 1873
20000	Last Chance, s,* Utah	5 0 0	¾	¼ ¾	0 14 0	0 2 0	July 1873
15000	Linares, l, Spain*†	3 0 0	6	5½ 6	15 14 2	0 10 0	Mar. 1876
65000	London and California, g*†	2 0 0	⅜	¼ ½	0 1 0	0 1 0	July 1875
7837	Lusitanian, Portugal*† (£5 shares)	3 10 0	1½	1 1½	1 11 6	0 1 6	Mar. 1873
5000	Mammoth Copperopolis of Utah, c, s	10 0 0	—		0 5 0	0 5 0	Dec. 1872
5000	Mountain Chief, s, Utah*	10 0 0	—		0 4 0	0 4 0	Jan. 1873
18000	Prussian Mining & Ironworks, cl, i.	30 0 0	—		6 0 0	3 0 0	July 1873
10000	Pontgibaud, s-l, France†	20 0 0	19	17 19	20 14 2	1 3 2	Nov. 1875
100000	Port Phillip, g, Clunes*†	1 0 0	⅜	⅛ ⅜	1 8 0	0 1 0	Jan. 1872
54000	Richmond Consols, s, Nevada*†	5 0 0	8¼	8¾ 9	2 14 0	0 7 6	May 1875
40000	Santa Barbara,* g, Brazil	0 10 0	1¼	1½ 1¾	0 1 3	0 1 3	Apr. 1876
120000	Scottish Australian Mining Co.*†	1 0 0	1½	1 1½	15 per cent.		May 1876
60000	Scottish Austral. Mining Co., New	0 5 0	½	⅜ ½	15 per cent.		May 1876
112500	Sierra Buttes, g, California*†	2 0 0	1½	¾ 1¼	1 14 0	0 2 0	Apr. 1876
60000	South Aurora, s, Nevada*	5 0 0	½	⅜ ½	0 14 2	0 2 0	Nov. 1873
£253000	St. John del Rey*† (£5 stock and multiples dealt in)			240 260	½ year...25 p. ct. for Dec. 1875		
15000	Sweetland Creek, g, California*†	4 0 0	2	¾ 1¼	3 6 0	0 2 0	Mar. 1876
20000	Tolima, g, s* So. America	5 0 0	3¼	3 3¼	0 11 6	0 6 6	May 1874
15000	Western Andes, s,* New Granada	5 0 0	—		2 6 7	0 3 3	Apr. 1876

NON-DIVIDEND FOREIGN MINES.

Shares.	Mines.	Paid.	Last Pr.	Clos. Pr.	Last Call.
20000	Anglo-Australian, g, Victoria*	2 10 0	—		Sept. 1872
5000	Anguilla Phosphate, West Indies (4000 issued)	10 0 0	—		Fully pd.
12000	Argentine, g, Argentine Republic	5 0 0	6	6 6½	Fully pd.
10000	Australian Central, g* (also 6000 deferred shares)	1 0 0	—		Fully pd.
3000	Bellavista, s, Peru* (£10 shares)	10 0 0	—		Fully pd.
30000	Blue Tent, hyd., California	5 0 0	3¼	3¼ 3¾	Fully pd.
50000	Braganza, g, Brazil*†	0 15 0	—		Oct. 1870
12000	Camp Floyd, s, Utah*	10 0 0	—		Fully pd.
35000	Cesena Sulphur Company, Romanga, Italy*	10 0 0	—		Fully pd.
50152	Chontales, g, s, Nicaragua*† (and 12,542 of £1 15s.)	2 0 0	⅜	⅛ ⅜	Fully pd.
6000	Clifton, s, Colorado*	5 0 0	—		Feb. 1872
16000	Condes of Chili, s-l	5 0 0	6½	6 6½	Fully pd.
10000	Crescent, g, Plumas County, California*	10 0 0	—		Fully pd.
35000	Excelsior Hydraulic Gold Washing Co., California*	6 0 0	—		Dec. 1871
100000	Exchequer, g, s, California*†	1 0 0	2¼	1¾ 2¼	Fully pd.
[illegible]	Frontino and Bolivia, g, New Granada*†	2 0 0	2¼	1¾ 2¼	Fully pd.
40000	Holcombe Valley, g,* California	1 0 0	—		July 1873
6000	Hornachos,* s-l, (£10 shares) Spain	10 0 0	15	15 18	Jan. 1874
20000	Imperial Brazilian Collieries, Brazil*	5 0 0	—		Fully pd.
100000	I. X. L., g, s, California*	1 0 0	1¼	1 1¼	Fully pd.
50000	Javali, g, Nicaragua*	2 0 0	⅜	¼ ½	Fully pd.
12000	Lanestosa,* l, z, Viscaya, Spain (£2 shares)	1 15 0	—		Mar. 1876
75000	Malabar, g, Colombia* (65000 issued)	1 0 0	—		Fully pd.
40000	Malpaso, g, Colombia* (10000 pref. shares, fully paid)	1 0 0	—		Fully pd.
12000	Menzenberg, c, Honnef, Germany*	5 5 0	—		Fully pd.
6000	Monte Loreto, g, c, Italy*	5 0 0	—		Fully pd.
66000	New Quebrada, c, Venezuela*	5 0 0	3¼	3¾ 4	Fully pd.
50000	New Rosario, s, Mexico*	1 0 0	—		Fully pd.
20000	New Zealand Kapanga, g, Coromandel*	5 0 0	⅜	⅝ ⅞	Fully pd.
3000	Oregon,* g, Oregon, U.S. (preference shares)	4 0 0	4¼	4 4¼	Sept. 1875
50000	Panulcillo, c, Chili*† (£80000 debentures)	4 0 0	2¼	1¾ 2¼	Fully pd.
30000	Pestarena United, g, Italy*†	3 0 0	⅜	¼ ¾	Fully pd.
50000	Rica, g, Colombia* (40000 issued)	1 0 0	—		Fully pd.
£2,181,000	Rio Tinto,* c, Huelva, Spain	Stock	57	56 58	Fully pd.
100000	Rossa Grande, g, Brazil*† (£1 shares)	0 19 0	½	½	July 1872
30000	Russia Copper, Orenburg and Ufa*†	10 0 0	3	2½ 3	Fully pd.
25000	San Pedro, c, Chili*	2 0 0	1½	1¼ 1½	Fully pd.
10000	Silver Plume, s, Colorado*	1 0 0	—		Fully pd.
87500	Snowdrift, s, Colorado*	2 0 0	—		Fully pd.
30000	Tecoma, s, Utah*	10 0 0	¾	⅝ ⅞	Fully pd.
20000	Thornhill Reef, g, Australia*	1 0 0	¼	⅛ ¼	Fully pd.
43174	United Mexican, s, Mexico*†‡	28 15 3	2½	2 2¼	May 1875
14000	Utah, g, s-l, Utah*	5 0 0	—		Fully pd.
25000	Victoria (London)*, g, Australia (25,000 sh. 16s. pd.)	1 0 0	—		Fully pd.
75000	Yorke Peninsula, c, South Australia	1 0 0	½	⅜ ½	Fully pd.
40000	Yorke Peninsula, c, South Australia Preference	1 0 0	1	¾ 1	Fully pd.

§ Have made calls since last dividend was paid.

FOREIGN AND MISCELLANEOUS STOCKS, BONDS, LOANS, AND TRUSTS.

	Closing Prices.	
Argentine, 1868, 6 per cent.	47	50
Bolivia, 6 per cent.	17	19
Brazilian, 1865, 5 per cent.	90	92
Chilian, 1866, 7 per cent.	100	104
City of Providence, 5 p.c. coupon bonds	95	97
Egyptian, 1862, 7 per cent.	25	38
Do., 1868, 7 per cent.	35	37
Do., 7 per cent., V.M.L.	34	39
Do., 9 per cent. guar.	40	45
Do., 7 per cent., K.M.L.	34	36
Foreign and Col. Gov. Trust, 5 p. cent.	75	85
Do., 5 per cent., 2d issue	55	65
Do., 6 per cent., 3d issue	60	70
Do., 1872, 4th issue	60	70
Do., 1873, 5th issue	55	65
Peruvian, 1870, 6 per cent.	18	19
Do. 1872, 5 per cent.	13½	14
Russian, 5½ per cent. L. Mort.	79	85
Spanish, Quicksilver Mort., 5 p. cent.	87	89
United States Mort., 6 per cent.	93	95

NON-DIVIDEND MINES.

Shares.	Mines.	Paid.	Last wk.	Clos. Pr.
40000	Aberdaunant, l, Llanidloes*	1 0 0	1⅝	1⅜ 1⅝
10000	Aberystwith,* s-l, Cardigan	5 0 0	—	
7800	Alvigg. & Burng.,* t, St. Aust. (£3 sh.)	1 10 0	1¾	1⅝ 1¾
18000	Ambrose Lake, t, c, Liskeard	1 18 6	—	
12000	Assheton, l, Carnarvonshire*	5 0 0	1½	1½ 1¾
50000	Ballycummisk,* c, Schull	2 0 0	—	
12000	Bedford United, c, Tavistock	1 17 6	1⅛	1 1⅛
28000	Belstone,* c, Devon (27,000 fully pd.)	1 0 0	3	2¾ 3
15000	Blaen United,* s-l, Cardigan	1 0 0	1⅛	⅞ 1⅛
15000	Blue Hills, t, c, St. Agnes	2 9 0	—	
2000	Bowden Hill,* mn	1 0 0	—	
20000	Brynambor, l, Cardigan	1 0 0	—	
4893	Bwadrain, s-l, Cardigan*	4 0 0	—	
4127	Bwlch Consols, s-l, Cardigan*‡	5 0 0	—	
30000	Caldbeck Fells, l, Cumberland*	2 0 0	—	
5584	Carn Camborne, c, t, Camborne	5 3 6	¼	⅛ ¼
10000	Cathedral, t, c, Gwennap*	1 10 0	1⅝	1⅜ 1⅞
20000	Central Foxdale, l, Isle of Man* (£2 sh.)	1 0 0	—	
10000	Central Van,* l, bl, Llanidloes	5 0 0	—	
20000	Cwm Dwyfor,* c, s-l, Carnarvonshire	1 0 0	—	
15000	Cwm Nant Ddu,* l, Montgomery	1 0 0	—	
3000	Cwmystwith (New) [5l. shares]	4 0 0	—	
10000	Denbighshire Consolidated, l*	3 0 0	3	2 3
656	Ding Dong, t, Gulval	51 9 6	4	3½ 4
10000	Dubby Syke, l, Durham*	0 9 0	¼	⅛ ¼
10000	Duchy Great Consols, c, Calstock	5 0 0	—	
512	East Basset, c, Redruth†‡	77 7 6	2½	2 2½
800	East Black Craig,* l., Scotland	25 0 0	—	
4000	East Chiverton, l, Perranzabuloe	6 12 0	2¼	1¾ 2¼
6000	East Grenville, c, Camborne	7 8 6	—	
30000	E. Nant-y-mwyn,* l, Brecknockshire.	1 0 0	⅜	¼ ⅜
6000	East Tywarnhaile, c, St. Agnes	0 10 0	4⅜	4⅛ 4⅜
15000	East Van, l, Llanidloes*	5 0 0	10¼	9½ 10
20000	Elgar,* s-l, Cardiganshire	1 0 0	1¼	1 1¼
12800	Florence and Tonkin United* l.	0 10 0	—	
5000	Frank Mills, l, Christow	5 6 0	⅝	⅛ ⅝
8000	Fronvellan, l, Mont.* [4000 sh. fy. pd.]	1 0 0	—	
3950	Gawton, c, Tavistock	4 6 0	⅝	⅜ ⅝
12000	Glan Clwyd,* l, Gwyddelwern	1 0 0	⅞	¾ ⅞
10000	Glan Severn, s-l, Flintshire	1 0 0	—	
2000	Glenroy,* s-l, Isle of Man	4 0 0	7½	7 8
10000	Glyn,* l, Llanidloes	2 0 0	3⅛	2⅞ 3⅛
15000	Gobbett, t, Dartmoor	1 0 0	—	
12000	Goginan, and Level Newydd, Card., l	2 10 0	—	
100000	Gold, g, Merionethshire	1 0 0	—	
20000	Goreu,* s-l, Carmarthen	1 0 0	—	
7500	Gorsedd and Merllyn Cons., , Flint	2 10 0	2¼	2¼ 2¾
20000	Gt. East Foxdale, l, I. of Man (1l. sh.)	0 15 0	—	
9500	Great Pant-y-Pydew, l, Holywell	2 0 0	—	
18000	Grosvenor, l, Holywell (£1 sh.)	0 7 0	—	
10000	Harehope Gill,* l, Durham (£1 sh.)	0 3 6	—	
6400	Harwood,* l, Durham	0 15 0	1⅛	1 1⅛
6000	Keswick United, l*	5 0 0	—	
6000	Killifreth, t, Chacewater	1 8 0	1	⅞ 1
25000	Kingston Consols, s-l, Cornwall	1 0 0	⅝	½ ⅝
12000	Ladywell,* l, Salop	2 10 0	1½	1⅜ 1⅛
2500	Levant, c, t, St. Just	9 6 6	—	
64	Llandilo, s-l, bl, Flintshire	50 0 0	—	
15000	Llanlivery Cons., t, c, ars, Llanlivery.	1 0 0	1¼	1¼
25000	Llanrhaiadr, l, Montgomery* (£2 sh.)	1 10 0	—	
30000	Llanrwst,* l, Carnarvon	2 0 0	3⅛	2⅞ 3⅛
15000	Llwyn Teify,* s-l, Cardigan	1 0 0	—	
6000	Medlyn Moor, t, Wendron	1 4 10	1⅝	1½ 1⅝
10000	Mellanear Copper, Hayle*	2 0 0	—	
13000	Monydd Gorddu, l, Cardigan*	5 0 0	4	3½ 4
4000	Nanty, l, Montgomeryshire*	1 0 0	—	
25000	Nant-y-Ronen, s-l, Cardigan*	1 0 0	—	
12000	Neptune,* c, Perranuthnoe	0 5 0	—	
10000	New Beldon, l, Northumberland*	1 0 0	—	
3000	New Chiverton,* l, Perranzabuloe	6 0 0	6½	6¼ 6½
20000	New Consols, c, Tavistock*	3 0 0	1	½ 1
8000	New Crickheath,* l, Shropshire	2 0 0	—	
8000	New Dolcoath, t, c, Camborne*	3 0 0	1⅛	1 1⅛
20000	New East Foxdale, s-l, Isle of Man	0 15 0	—	
16000	New Fowey Consols, t, St. Blazey*	3 0 0	2	1½ 2
2000	New Hendra, t, Breage	2 9 0	1¼	1 1¼
10000	New North Pool,* c, Illogan	3 0 0	—	
6400	New Pembroke, t, c, Par Station	5 8 0	⅝	½ ⅝
5000	New Rosewarne, c, Gwinear	5 12 0	¾	⅝ ¾
3200	New South Merllyn, l, Flint*	2 10 0	—	
4000	North Cornwall, l, Cornwall (£5 sh.)	3 0 0	3¼	3 3¼
17000	North Laxey,* Isle of Man	2 0 0	1⅛	⅞ 1
20000	North Prince Patrick,* l, Holywell	1 0 0	1¼	1 1¼
2000	North Wheal Towan, t, c, Illogan	1 19 6	—	
1000	North Rosewarne, c, Gwinear	6 12 6	—	
8000	North Treleigh Wood, t, Redruth*	1 0 0	1¼	1 1¼
5936	North Treskerby, c, St. Agnes	3 15 4	—	
6000	Old Talargoch, l, Flintshire*	2 0 0	—	
2500	Old Tincroft, c, t, Lelant*	4 0 0	4⅜	4⅛ 4⅜
16923	Parys Mountain,* c, Anglesea	3 0 0	⅞	⅞ 1
4000	Pateley Bridge, l, Yorkshire	5 0 0	4½	3½ 4
9530	Peln-an-drea, t, Redruth§	9 17 0	—	
6000	Pennant, l, bar, North Wales*	5 0 0	5¼	5 5¼
12000	Pennerley, l, Shropshire*	2 0 0	2	2 2¼
12000	Plynlimmon, l, Llanidloes*	2 5 0	⅜	⅜ ½
648	Polrose, t, Breage	21 0 0	—	
10000	Port Nigel,* s-l, Carnarvonshire	2 0 0	2	1½ 2
2000	Prideaux Wood, t, Llanivery	5 0 0	—	
12800	Prince of Wales, c, Calstock‡	1 9 0	¼	⅛ ¼
6000	Relistian Consols, c, Gwinear	0 10 0	¾	⅝ ⅞
15000	Rookhope, l, Durham*	1 10 0	1⅛	⅞ 1
5869	Rosewall Hill and Ransom, t	4 17 6	⅜	¼ ⅜
6000	Rosewarne United, c, t, Gwinear	1 10 0	—	
3000	Russell, s-l, Swymbridge	0 6 0	—	
5000	Silvercross,* c, t, Marazion	1 0 0	1⅛	1 1⅛
4200	Snowbrook, s-l, Montgomery	5 0 0	—	
12000	South Bwadrain, s-l, Llanbadarnfawr	0 10 0	—	
5000	South Carn Brea, c, t, Illogan	3 1 0	1⅛	1¼ 1¾
6000	South Cwmystwith, l, Cardiganshire.	0 10 0	2½	2 2½
6000	South Darren, l, Cardigan*	1 10 0	—	
512	South Dolcoath, c, t, Redruth	12 5 0	1½	1 1½
12000	South Lisburne, l, bl, Cardigan*	0 12 6	—	
18000	South Roman Gravels, l*	1 10 0	1½	1 1¼
6000	South Roskear, t, c, Camborne	6 10 0	5	4 5
6000	South Tolcarne, t, c, Camborne	1 9 0	⅜	¼ ⅜
12000	South Van,* l, Montgomeryshire	1 0 0	—	
3000	South Ward, l, Beerferris	5 8 0	1¼	⅞ 1⅛
937	South Wheal Crofty, c, Illogan	36 0 10	—	
4500	South Wh. Frances, c, Illogan†	6 8 4	1½	1 1½
432	Spearn Moor, t, Penzance‡	46 17 9	—	
14000	St. Blazey t.* (£2 10s. shares)	2 0 0	—	
6000	St. Lawrence, Amal., l, Flintshire*	2 0 0	—	
12000	St. Harmon,* l, Montgom	3 0 0	3¼	3¼ 3¾
10000	St. Patrick, l, Halkin, Holywell*	1 0 0	1½	1¼ 1⅛
6000	Success, &c., l, Derb. (12,000l. called)	1 0 0	—	
16000	Sunnyside,* l, Durham	2 0 0	3⅛	3 3¼
30000	Talybont,* s-l, Talybont	1 0 0	1	⅞ 1
6400	Teesdale,* l, Durham	0 18 0	2½	2 2½
14000	Teign Valley, l, bar., Bridford	1 0 0	—	
10000	Temple, l, Cardigan*	1 0 0	2¼	2 2¼
12000	Treleigh Consols, s-l, St. Ive	0 4 0	½	¼ ½
6000	Treleigh Wood, t, Redruth	5 11 0	—	
547	Trelyon Consols	15 0 0	⅝	⅜ ⅝
12000	Trethellan, s-l, Crantock*	2 0 0	—	
4000	Trumpet Consols, t, Helston§	9 0 0	—	
5174	Unity Wood, t, c, Kenwyn	3 18 0	2	1¾ 2
20000	Van Consols, l, Llanidloes*	2 10 0	2	1⅞ 2⅛
1000	Vaughan, s-l, Cardigan	10 0 0	—	
12000	West Assheton, l, Carnarvon	1 0 0	2	1⅞ 2⅛
6000	West Basset, c, Illogan‡	5 6 8	5½	5 5½
20000	West Bryn Celyn,* l, Flintshire	1 0 0	—	
3000	West Craven Moor, l, Pateley Bridge*	10 0 0	—	
12000	West Esgair Lle, l, Card.*	2 0 0	⅝	½ ⅝
6000	West Godolphin, t, c, Breage	1 13 6	1¾	1½ 1¾
12000	West Goginan,* Cardiganshire	2 0 0	2½	2 2½
15000	West Great Work, t, Breage*	1 0 0	1	¾ 1
10000	West Llangynog, s-l, Montgomery	2 0 0	—	
12000	West Maria & Fortescue, t, c, Lamer.	4 12 6	⅜	¼ ⅜
3000	West Mary Ann, l, Menheniot	0 3 6	¼	⅛ ¼
50000	West Milwr, s-l, Flint	1 0 0	—	
12000	West Pant-y-Go, s-l, Flint*	1 0 0	—	
4000	West Pateley Bridge, l, Yorkshire	5 0 0	5½	5 5½
3000	West Phœnix, t, Linkinhorne	0 18 0	—	
1403	West Polbreen, t, St. Agnes	3 5 0	—	
10000	West Roskear, t, s-l, bl, c, Camborne	0 12 0	3	2½ 3
12000	West Tankerville, l, Salop*	3 0 0	2	1⅞ 2⅛
6000	West Wheal Gorland, t, c	4 0 0	—	
3000	West Wheal Peevor, t, Redruth	0 10 0	—	
6000	West Wheal Seton, c, Camborne†	40 0 0	30	25 30
6000	Wheal Agar, c, Illogan	11 10 0	3	2½ 3
6000	Wheal Argus, t, Sancreed	0 10 0	—	
2500	Wheal Arthur, t, c, Calstock	1 0 0	—	
741	Wheal Basset and Grylls, t	9 18 6	—	
6000	Wheal Coates, t, St. Agnes	2 0 0	—	
6000	Wheal Crebor, c, Tavistock	4 1 0	2¼	2 2¼
8400	Wheal Emma, t, c, Buckfastleigh	1 10 0	—	
5179	Wheal Grenville, c, Camborne*	11 11 6	1½	1 1½
12000	Wh. Mary Hutchings,* t, Plympton.	1 14 0	—	
8000	Wheal Peevor, t, Redruth	6 1 0	2⅜	2¼ 2⅜
4096	Wheal Uny, t, c, Redruth	13 6 6	1⅜	1⅛ 1⅜

IRON AND COAL COMPANIES.

Shares.	Company.	Paid.
£100	Abbot, John, and Co. [L.]	£75 0 0
15	Albion Steel and Wire Co. [L.]	12 10 0
5	Alltami Colliery Co. [L.]	5 0 0
100	Ashbury Co. [L.]	90 0 0
10	Bagnall, John, and Sons [L.]	10 0 0
10	Benhar Coal Co. [L.]	10 0 0
50	Bilbao Iron Ore Co. [L.]	50 0 0
10	Bilson & Crump Meadow Coll. Co. [L.]	10 0 0
4	Blaen Cwmbach Coal Co. [L.]	4 0 0
50	Blaenavon Iron and Steel Co. [L.]	50 0 0
100	Bolckow, Vaughan, and Co. [L.] A	40 0 0
50	Bowling Iron Co. [L.]	50 0 0
50	Britannia Ironworks [L.]	25 0 0
50	Brown, Bailey, and Dixon [L.]	40 0 0
100	Brown, John, and Co. [L.]	70 0 0
5	Cakemore Colliery Co. [L.]	5 0 0
100	Cammell and Co. [L.]	80 0 0
20	Cannock and Huntington Coal [L.]	2 0 0
10	Cardiff & Swansea St. Coal Co. [L.]	8 0 0
10	Cardigan Steel and Wire Co. [L.]	7 10 0
10	Central Swedish Iron and Steel [L.]	10 0 0
5	Chapel House Colliery	5 0 0
50	Charlton Iron Co. [L.]	40 0 0
50	Chatterley Iron Co. [L.]	40 0 0
10	Chillington Iron Co. [L.]	10 0 0
1	Clee Hill Colliery Co. [L.]	1 0 0
10	Consett Iron Co. [L.]	7 10 0
1	Consett Spanish Ore [L.]	1 0 0
50	Cooke, William, and Co. [L.]	30 0 0
20	Darlington Iron Co. [L.]	1 0 0
50	Davy Brothers [L.]	22 10 0
5	Diamond Fuel Co [L.]	4 10 0
32	Ebbw Vale Co. [L.]	29 0 0
100	Fox, Samuel, and Co. [L.]	80 0 0
10	General Mining Ass. [L.] (£1 returned)	9 0 0
20	Great Western Coal Co. [L.]	17 0 0
2	Gwyngwillim Colliery Co. [L.]	2 0 0
15	Hopkins, Gilkes, and Co. [L.]	11 0 0
10	Ifton Rhyn Colliery Co. [L.]	10 0 0
50	Knowles, Andrew, and Sons [L.]	17 0 0
10	Llay Hall Coal, Iron, & Firebrick [L.]	10 0 0
5	Littledean Woodside Coll. Co. [L.]	5 0 0
50	Llynvi, Ogmore, & Tondu Co. [L.]	50 0 0
10	Lydney and Wigpool Iron Ore [L.]	7 5 0
10	Marbella Iron Ore Co. [L.]	10 0 0
6	Mersey Steel and Iron Co. [L.]	5 0 0
10	Midland Iron Co. [L.]	5 0 0
5	Mold Argoed Colliery Co. [L.]	5 0 0
10	Monkland Iron and Coal Co. [L.]	10 0 0
4	Mwyndy Iron Ore [L.]	3 10 0
100	Nant-y-Glo and Blaina (8 p.c. pref.)	100 0 0
1	Nerbudda Coal and Iron	0 8 0
20	New Sharlston Collieries [L.] Pref.	20 0 0
10	Newport Abercarn Coal Co. [L.]	8 0 0
10	Northmptn. Coal, Iron & Wagon [L.]	8 0 0
10	Northfield Iron Co. [L.]	8 0 0
1	Norton Green Coal Co. [L.]	1 0 0
35	Palmer's Shipbuilding and Iron [L.]	25 0 0
100	Parkgate Iron Co. [L.]	65 0 0
20	Patent Nut and Bolt Co. [L.]	14 0 0
20	Patent Shaft and Axletree [L.]	10 0 0
20	Pelsall Coal and Iron [L.]	15 0 0
50	Phœnix Bessemer Co. [L.]	40 0 0
50	Rhymney Iron Co. [L.]	50 0 0
100	Sandwell Park Colliery Co. [L.]	100 0 0
50	Ditto New	10 0 0
50	Shotts Iron Co. [L.]	50 0 0
100	Sheepbridge Iron and Coal [L.]	58 0 0
50	Silkstone & Dodworth Cl. & Iron [L.]	27 0 0
20	Skerne Ironworks [L.]	20 0 0
50	Somorrostro Iron Co. [L.]	50 0 0
20	South Wales Coal Co. [L.]	17 0 0
100	Staveley Iron and Coal Co. [L.]	60 0 0
100	Ditto ditto New	10 0 0
20	South Cleveland Ironworks [L.]	20 0 0
10	Swansea Valley Steam Coll. Co. [L.]	6 0 0
100	Thames Iron Company	100 0 0
50	Tredegar Iron and Coal Co. [L.]	12 0 0
25	Ditto B. shares	25 0 0
20	Ulverston Mining Co. [L.]	12 0 0
1	United Bituminous Collieries [L.]	1 0 0
10	Vancouver Coal [L.]	6 0 0
100	Vickers, Sons, & Co. [L.] 6 p. c. deb.	100 0 0
50	Welsh Ironworks Co. [L.]	50 0 0
25	W. Cumberland I. and Steel [L.]	20 0 0
10	West Mostyn Coal [L.] (12 p.c. pref.)	5 0 0
5	West Swansea Colliery Co. [L.]	5 0 0
10	Whitehaven Iron Co. [L.]	10 0 0
100	Wigan and Whiston Coal Co. [L.]	70 0 0
100	Wigan Coal and Iron Co. [L.]	75 0 0

WAGON COMPANIES.

Shares.	Company.	Paid.
10	Birmingham Wagon Co. [L.]	10 0 0
20	British Wagon Co. [L.]	10 0 0
20	Sheffield Wagon Co. [L.]	15 0 0
10	Yorkshire Wagon Co. [L.]	10 0 0

TELEGRAPH COMPANIES.

Shares.	Company.	Paid.
"St."	Anglo-American	100 0 0
10	Brazilian Submarine	10 0 0
20	Direct United States Cable	20 0 0
10	Eastern	10 0 0
10	East. Exten., Australia and China	10 0 0
10	Great Northern	10 0 0
25	Indo-European	25 0 0
10	Mediterranean Extension	10 0 0
8	Reuters	8 0 0
Stk.	Submarine	100 0 0
10	West India and Panama	10 0 0
20	Western and Brazilian	20 0 0
$1000	Western Union, 7 per cent. Mort. Bonds	$1000

MISCELLANEOUS.

Shares.	Company.	Paid.
Stk.	Atlantic and Great Western Leased Lines, Rental Trust	100 0 0
25	Austral. Mort. Land and Finance [L.]	5 0 0
25	Australian Agricultural	21 10 0
10	Avonside Engine [L.]	7 0 0
Stk.	Baltimore and Ohio, 6 per cent.	100 0 0
Stk.	Cent. of New Jersey Con. Mort.	100 0 0
Stk.	Cent. Pacific of Calif., 1st Mort. 6 p.c.	100 0 0
25	City of London Real Property [L.]	12 0 0
25	Copper Miners of Eng. (7 p. c. pref.)	25 0 0
5	Credit Foncier of England [L.]	5 0 0
5	Diamond Rock Boring	4 10 0
15	English and Foreign Credit	8 0 0
15	Foster, Porter, and Co. [L.]	10 10 0
5	Gen. Phos. & Chem. Works Co. [L.]	5 0 0
1	Glaisdale Whinstone Quarry	1 0 0
17	Hudson's Bay Company	17 0 0
10	Huntington Copper and Sul. Co.	9 0 0
Stk.	Illinois Central, $100 shares	100 0 0
Stk.	Illinois & St. Louis Bridge, 1st Mort.	100 0 0
Stk.	Ditto, 2nd Mort., 7 per cent.	100 0 0
Stk.	Illinois Cent. Sinking Fund, 5 p. cent.	100 0 0
Stk.	Ditto, 6 per cent.	100 0 0
7½	Imperial Credit [L.]	7 10 0
—	Ditto, Surplus Certificate	—
Stk.	Lehigh Val. Con. Mort., A, 6. p. cent.	100 0 0
10	Milner's Safe [L.]	10 0 0
25	National Discount [L.]	5 0 0
Stk.	N. Cent. Rail. Con. Mort., 6 per cent.	10 0 0
5	Patent Gunpowder Company	5 0 0
50	Peninsular and Oriental Steam	50 0 0
Stk.	Pennsyl. Gen. Mort. 6 p. cent., 1910.	100 0 0
Stk.	Ditto, Con. Sink. Fund, 6 p. ct., 1905	100 0 0
Stk.	Scottish Aust. Investment Company.	100 0 0
Stk.	Ditto, 6 per cent. Preference	100 0 0
10	Silber Light (ord. sh.)	10 0 0
20	Suez Canal shares	20 0 0
12	Telegraph Construc. & Mainte. [L.]	12 0 0
5	Ditto, Second Bonus Three per Cents	5 0 0
10	Tharsis Sulphur and Copper Co.	10 0 0
Stk.	Union Pacific Land Grant, 1st Mort.	100 0 0
Stk.	Union Pacific Railway, 1st Mort.	100 0 0

b, blende; cl, coal; c, copper; g, gold; l, lead; s, silver; s-l, silver-lead; t, tin; z, zinc.
* Limited Liability Companies; † quoted on the Stock Exchange; ‡ have paid dividends.

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